



This course supports the assessments for Pharmacology. The course covers 5 competencies and represents 2 competency units.

## Introduction

### Overview

In 2006, the Institute of Medicine released a report that cited medication errors as the most common medical errors, costing billions of dollars and harming up to 1.5 million people every year. Medication errors often result from nurses failing to follow proper procedures before administering a medication.

Nurses and other members of the healthcare team need to be vigilant about following proper procedure and need to have a solid knowledge of pharmacology. Medication administration may seem simple on the surface, but within busy healthcare environments, other issues may come into play that can affect the safety of medication administration. You will become competent in the fundamentals of pharmacology as a result of this course.

### Competencies

This course provides guidance to help you demonstrate the following 5 competencies:

- **Competency 724.1.1: Regulations, Standards, & Evidence-Based Practice in Drug Therapy**  
The graduate identifies nursing regulations related to drug preparation and administration and identifies federal and state legislative standards and policies regulating the development, preparation, and administration of drugs.
- **Competency 724.1.2: Terms and Concepts in Pharmacology**  
The graduate recognizes common concepts in pharmacology and correctly uses common terms and abbreviations in pharmacology; applies basic concepts of pharmacology to demonstrate how to appropriately follow a drug order and obtain informed consent; and explains ethical use of medications.
- **Competency 724.1.3: Drug Classification**  
The graduate recognizes the general actions and characteristics of major drug classes; identifies how different classes of drugs affect the body; and, distinguishes between the different drug names.
- **Competency 724.1.4: Role of the Nurse in Drug Therapy**  
The graduate recognizes nursing responsibilities related to safe administration of medications; educates the patient and/or family/caretaker in appropriate medication usage, side effects, contraindications, and expected therapeutic effects; recognizes ethical and legal issues surrounding medication administration; and applies the steps of the nursing process in planning the care of patients receiving drug therapy.
- **Competency 724.1.5: Preparation for Administration of Medications**  
The graduate employs accurate dosage calculations and appropriate use of technology to effectively, appropriately, and safely administer drugs and maintain the quality of medication therapy.



## **Nursing Dispositions Statement**

Please review the [Statement of Nursing Dispositions](#).

## **Course Instructor Assistance**

As you prepare to successfully demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course instructors are fully committed to your success!

## **Preparing for Success**

The information in this section is provided to detail the resources available for you to use as you complete this course.

## **Learning Resources**

The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to manually enroll in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.

### **Manually Enrolled Resources**

Take a moment to enroll in the learning resources listed in this section. To enroll, navigate to the "Learning Resources" tab, click the "Sections" button, and then click the "Enroll Now" button for each resource. Once your mentor approves your enrollment in the resource, you will receive an e-mail with further access instructions. Contact your mentor if you have questions.

### **MyNursingLab**

If you do not correctly access MyNursingLab, you may fail to receive credit for your coursework and may have to retake your posttests. The following e-text is included in MyNursingLab. You will receive a separate registration email for the e-text in MyNursingLab.

- Adams, M., Holland, L., Jr., & Bostwick, P. (2008). *Pharmacology for nurses: A pathophysiologic approach* (2nd ed.). NJ: Pearson. ISBN-13: 9780131756656.

*Note: If you wish to purchase a hard copy at your own expense, you may at the WGU Bookstore or at another store. Be sure to order early and use the correct ISBN to get the correct edition.*



## MyNursingLab Pretest and Plan of Study

As you work through this course, it will direct you to specific chapters to work through in the [MyNursingLab Pharmacology](#) course. Be sure to engage in the activities, audio glossary, readings, videos, animations, and skills labs. Do the assignment for this activity and take the pretest. Remember, this is a pretest, and you are not expected to know all of the answers at this time. Your results in this pretest will develop a plan of study suited just for you.

1. Once you have answered all of the questions, you will get a score and overview of each question.
2. Click “Return to Study Plan.” You will be taken to your individualized study plan.
3. You can now begin to work through each reading assignment and activity in your study plan. This includes a review of concepts and skills. Be sure that you read and practice each skill.
4. As you work through the activities and skills, all of your grades are submitted into the MyNursingLab program.

*Note: If you do not need to cover certain areas in your plan of study but still want to study them, you can go to “Chapter and Resources” and access “Study Resources.” Everything for each objective is there for you.*

## Pharmacology for Nurses Companion Website

You should access the [companion website for Pharmacology for Nurses](#). This provides additional case studies and NCLEX questions that will help you determine whether you are developing competency. On this site you will also find “Drug Guides,” “Preventing Medication Errors,” and “MediaLink Applications” to support your learning.

## Pacing Guide

The pacing guide suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the pacing guide carefully to complete the course in the suggested timeframe.

- [Pacing Guide: Pharmacology](#)

*Note: This pacing guide does not replace the course. Please continue to refer to the course for a comprehensive list of the resources and activities.*

## Safe Medication Administration and Documentation

Preventing medication errors is a system-wide challenge in every healthcare environment, and the nurse is often the last barrier between the patient and the pending error. It is important for the nurse to understand that, despite all the policies and procedures in place and all the studies that address errors, medication errors, and errors that can have devastating effects on the patients. Administration errors are not the only errors that occur. Documentation errors or omissions may lead to serious consequences for patients, such as underdosing or overdosing. Nurses who fail to accurately and consistently document medications can face serious professional and legal consequences. Thus, the importance of learning and adhering to the nurse’s role in medication therapy cannot be overstated.



## Identification for Medication Administration

Not properly identifying who the patient is can easily lead to errors. Unfortunately there are many reasons a patient can be misidentified. What steps must the nurse take to make sure the right medication gets to the right patient?

This topic addresses the following competencies:

- **Competency 724.1.2: Terms and Concepts in Pharmacology**  
The graduate recognizes common concepts in pharmacology and correctly uses common terms and abbreviations in pharmacology; applies basic concepts of pharmacology to demonstrate how to appropriately follow a drug order and obtain informed consent; and explains ethical use of medications.
- **Competency 724.1.3: Drug Classification**  
The graduate recognizes the general actions and characteristics of major drug classes; identifies how different classes of drugs affect the body; and, distinguishes between the different drug names.

### MyNursingLab: Principles of Drug Administration

Go to MyNursingLab and open the following chapter in the Pharmacology course:

- chapter 4 ("Principles of Drug Administration")

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 4. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### Use of Automated Information Systems to Reduce Errors

Review "[Reduction in Medication Errors in Hospitals](#)," by Rajeev B. Patel.

Consider the following questions:

- What are the automated information systems applications listed in the article?
- What is the computerized physician order entry (CPOE) system?
- What are the automated dispensing technologies?
- What is the bar coding technology?

*Note: This assignment is not submitted in TaskStream.*

### NCLEX Review: Chapter 4

Access the following website:



- [Pharmacology for Nurses](#)

To enhance your learning for this chapter as you begin preparing for the assessment exam and the NCLEX-RN examination, complete the chapter 4 NCLEX-RN review questions available for this chapter.

## **Documenting and Evaluating Medication Administration**

What are your initial impressions of this process? What needs to be taken into account when evaluating medication effectiveness? Use the learning resources to increase your knowledge, skill, and, ultimately, your competency.

This topic addresses the following competencies:

- **Competency 724.1.2: Terms and Concepts in Pharmacology**  
The graduate recognizes common concepts in pharmacology and correctly uses common terms and abbreviations in pharmacology; applies basic concepts of pharmacology to demonstrate how to appropriately follow a drug order and obtain informed consent; and explains ethical use of medications.
- **Competency 724.1.5: Preparation for Administration of Medications**  
The graduate employs accurate dosage calculations and appropriate use of technology to effectively, appropriately, and safely administer drugs and maintain the quality of medication therapy.

### **MyNursingLab: Medication Errors and Risk Reduction**

Go to MyNursingLab and open the following chapter in the Pharmacology course:

- chapter 9 ("Medication Errors and Risk Reduction")

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 9. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### **NCLEX Review: Chapter 9**

Access the following website:

- [Pharmacology for Nurses](#)

To enhance your learning for this chapter as you begin preparing for the assessment exam and the NCLEX-RN examination, complete the chapter 9 NCLEX-RN review questions available for this chapter.

## **Patient-Centered Care and Patient Safety**



Caution needs to be taken by consumers before they take any drug, whether prescribed or over the counter. Nurses have to understand the interactions of drugs and the various responses to drugs in regard to physiology, age, gender, and genomics. Today there is an increase in the use of alternative therapies, such as dietary supplements that may interfere with a particular drug.

Ultimately, the nurse strives to deliver patient-centered, individual pharmacotherapy while understanding why regulation and standards are developed to protect patients from harm. This section will also cover terminology and abbreviations.

## **Drug Regulations and Standards**

Just because a drug is approved does not mean it is safe for every patient. The United States has some of the strictest regulations in the world regarding pharmaceutical agents. There are many reasons for standards in the regulation of drugs. The major reason is the protection of the public. It is important to administer drugs cautiously and to be armed with up-to-date knowledge, but it is just as important to recognize that, despite regulations, some drugs are dangerous for some patients.

This topic addresses the following competencies:

- Competency 724.1.1: Regulations, Standards, & Evidence-Based Practice in Drug Therapy  
The graduate identifies nursing regulations related to drug preparation and administration and identifies federal and state legislative standards and policies regulating the development, preparation, and administration of drugs.

### **MyNursingLab: Drug Regulation and Approval**

Go to MyNursingLab and access the following chapter in the Pharmacology course:

- chapter 1 ("Introduction to Pharmacology: Drug Regulation and Approval")

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 1. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### **Drug Guides and Resources**

Chapter 1 of *Pharmacology for Nurses* describes the roles of the Food and Drug Administration (FDA).

- What does the FDA oversee?
- What are the names of the various centers within the FDA and their exact purpose?
- What degree of protection does the FDA provide for consumers?



- How will you, the nurse, remain current on drug information?

## **Drug Research**

In chapter 1 of *Pharmacology for Nurses*, you learned about how drugs are tested and the process they go through prior to being put on the market. In research trials on drugs there are usually two participant groups. One group receives the actual drug being tested and one group receives a placebo or substitute that has no medication effect. Sometimes this has been called a sugar pill.

Read the following article:

- "[Deception in Research on the Placebo Effect](#)"

Doctors outside of research, in their regular practice, also prescribe placebos. However, it is required that they inform their patients. What effect do you think this might have on the results of the treatment?

*Note: This assignment is not submitted in TaskStream.*

## **Making Evidence-Based Drug Therapy Decisions**

Review the following multimedia presentation:

- "[Introduction to Evidence-Based Practice](#)"

Consider the following questions:

- What is evidence-based medicine?
- What are the steps in the evidence-based medicine process?
- Why is evidence-based medicine important?
- What are key issues that help determine the validity of the results of a study?

*Note: This assignment is not submitted in TaskStream.*

## **NCLEX Review: Chapter 1**

Access the following website:

- [Pharmacology for Nurses](#)

To enhance your learning regarding the content in this chapter, and to begin preparing for your assessment exam and for your NCLEX-RN examination, complete the chapter 1 NCLEX-RN review questions.

## **Pharmacokinetics**

Pharmacokinetics is the study of how the body handles drugs, how substances travel across plasma membranes, what factors affect drug absorption and metabolism, how plasma proteins affect drug distribution, and how drugs are excreted. Pharmacokinetics determines how a





drug's plasma half-life reaches and maintains its therapeutic range in the plasma. It determines drug loading and maintenance doses. As more and more drugs are prescribed using pharmacokinetic principles, it is important to understand some its theories and components.

This topic addresses the following competencies:

- **Competency 724.1.3: Drug Classification**  
The graduate recognizes the general actions and characteristics of major drug classes; identifies how different classes of drugs affect the body; and, distinguishes between the different drug names.

### **MyNursingLab: Pharmacokinetics**

Go to MyNursingLab and access the following chapters in the Pharmacology course:

- chapter 5 ("Pharmacokinetics").

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 5. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### **Case Study: Pharmacokinetics**

Access the following website:

- [Pharmacology for Nurses](#)

Read the case study on Jane Marshall. Discuss this case study in the [Pharmacology Community discussion thread](#).

### **NCLEX Review: Chapter 5**

Access the following website:

- [Pharmacology for Nurses](#)

To enhance your learning for this chapter as you begin preparing for the assessment exam and the NCLEX-RN examination, complete the chapter 5 NCLEX-RN review questions.

## **Pharmacodynamics**

Pharmacodynamics is the study of how the body responds to a drug. This is somewhat different from how the body handles a drug as described in pharmacokinetics.

Pharmacodynamics uses frequency response curves to explain how clients respond differently





to medications; it determines a drug's therapeutic index and its margin of safety, potency, and efficacy.

This topic addresses the following competencies:

- **Competency 724.1.3: Drug Classification**  
The graduate recognizes the general actions and characteristics of major drug classes; identifies how different classes of drugs affect the body; and, distinguishes between the different drug names.

### **MyNursingLab: Pharmacodynamics**

Go to MyNursingLab and access the following chapters in the Pharmacology course.

Complete the following activities:

- Open chapter 6 ("Pharmacodynamics").
- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 6. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### **Case Study: Pharmacodynamics**

Access the following website:

- [Pharmacology for Nurses](#)

Read the case study on John Bissell. Discuss this case in the [Pharmacology Community discussion thread](#).

### **NCLEX Review: Chapter 6**

Access the following website:

- [Pharmacology for Nurses](#)

To enhance your learning for this chapter as you begin preparing for the assessment exam and the NCLEX-RN examination, complete the chapter 6 NCLEX-RN review questions.

## **Drug Classifications and Names**

Nurses need to be familiar with drug classifications and the various names associated with a drug. Oftentimes patients prefer purchasing a generic drug because it is generally less expensive. Some insurance companies will only cover drugs in certain forms or a select number of drugs within a classification. Thus, nurses may need to work with the patient, family, physician, and insurance provider to help determine the best choice given the patient's



circumstances. At times a patient cannot tolerate the generic form of a drug, but their insurance will not cover a non-generic brand. The nurse may be the best person to act as a liaison between the insurance company and the patient who needs the drug.

## **Drug Classification**

Drugs are grouped by their source (e.g., animal, vegetable, mineral), by their chemistry, and by their therapeutic effect (e.g., antihistamine, antibiotic). A given drug has several names: a name that describes its chemical properties, a generic name (often based on its chemical properties), and a trade name (the commercial name provided by its manufacturer [e.g., Tylenol, Claritin]). Drugs also have legal classifications that reflect their addictive properties and their potential for abuse. At times you may be able to ascertain the action or purpose of a drug by its classification name. Although you should not rely solely on this technique, it may give you a clue as to where to look up the information you are seeking.

This topic addresses the following competencies:

- **Competency 724.1.3: Drug Classification**  
The graduate recognizes the general actions and characteristics of major drug classes; identifies how different classes of drugs affect the body; and, distinguishes between the different drug names.

### **MyNursingLab: Drug Classes and Schedules**

Go to MyNursingLab and access the following chapter in the Pharmacology course.

- chapter 2 ("Drug Classes and Schedules").

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 2. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### **NCLEX Review: Chapter 2**

Access the following website:

- [Pharmacology for Nurses](#)

To enhance your learning for this chapter as you begin preparing for the assessment exam and the NCLEX-RN examination, complete the chapter 2 NCLEX-RN review questions.

## **The Role of the Nurse in Patient-Centered Drug Therapy**

You may be surprised by how people respond to the same medication. What factors influence that response? How does the nurse assess the individual needs of the patient and family



regarding medications? Think about patients taking several different medications; some should be taken with food, some should be taken on an empty stomach, some medications are prescribed “as needed.” It can get pretty confusing. Could patients’ age, beliefs, or cultural practices affect their ability to comply with a particular medication regime? The nurse is a detective who must make the assessment, weigh all the factors, and create a patient-centered education plan that meets the patient’s individual needs.

## **Educating Patients About Drug Therapy**

Think about why drug education is so crucial for patients. What does the patient need to know? Where will they get the prescription, how expensive is it? What time of day should patients take it, how much should they take, how often should they take it? Should they take the medication with food or without food? Is this a drug they can stop taking all at once or does it need to be weaned? What should patients do if they miss a dose? What side effects should they report? How can other substances (which have pharmacological properties but are not classified as drugs) interact with substances that are identified as drugs? Complete the activities in this section to construct new knowledge about educating patients on drug therapy.

This topic addresses the following competencies:

- **Competency 724.1.4: Role of the Nurse in Drug Therapy**  
The graduate recognizes nursing responsibilities related to safe administration of medications; educates the patient and/or family/caretaker in appropriate medication usage, side effects, contraindications, and expected therapeutic effects; recognizes ethical and legal issues surrounding medication administration; and applies the steps of the nursing process in planning the care of patients receiving drug therapy.
- **Competency 724.1.5: Preparation for Administration of Medications**  
The graduate employs accurate dosage calculations and appropriate use of technology to effectively, appropriately, and safely administer drugs and maintain the quality of medication therapy.

### **MyNursingLab: The Nursing Process in Pharmacology**

Go to MyNursingLab and access the following chapter in the Pharmacology course.

- Open chapter 7 ("The Nursing Process in Pharmacology").

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 7. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

### **Developing Teaching Plans for Drug Therapy**

Think about what you have learned about drug administration, treating different age groups, and



patient compliance in taking medication. What important aspects of teaching would you need to think about when developing a teaching plan? What if the patient were a child or a patient with cognitive or memory impairment? What if the medication has possible side effects that need to be reported immediately? Make up a short teaching scenario for a patient of your choice.

### **NCLEX Review: Chapter 7**

Access the following website:

- [Pharmacology for Nurses](#)

To enhance your learning for this chapter as you begin preparing for the assessment exam and the NCLEX-RN examination, complete the chapter 7 NCLEX-RN review questions.

## **Substance Abuse**

Across the world, societies are faced with the problem of addiction. In the United States, there has been a dramatic increase in the abuse of prescription drugs. It is important for nurses to be aware of the signs and symptoms of addiction and the complex problems faced when trying to treat a patient suffering from addiction.

This topic addresses the following competencies:

- **Competency 724.1.4: Role of the Nurse in Drug Therapy**  
The graduate recognizes nursing responsibilities related to safe administration of medications; educates the patient and/or family/caretaker in appropriate medication usage, side effects, contraindications, and expected therapeutic effects; recognizes ethical and legal issues surrounding medication administration; and applies the steps of the nursing process in planning the care of patients receiving drug therapy.
- **Competency 724.1.5: Preparation for Administration of Medications**  
The graduate employs accurate dosage calculations and appropriate use of technology to effectively, appropriately, and safely administer drugs and maintain the quality of medication therapy.

### **MyNursingLab: Substance Abuse**

Go to MyNursingLab and access the following chapter in the Pharmacology course.

- Open chapter 12 ("Substance Abuse").

Complete the following activities:

- Choose "Study Plan," click "Begin," and take the pretest.
- Open your personalized plan of study and work through the activities specific to your learning needs.
- Complete the posttest for chapter 12. You must score 80% or higher to pass.
- As you work through the activities and skills, all of your grades will be submitted to the MyNursingLab program, where your mentor will monitor your progress.

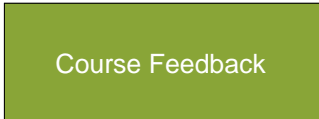
## **Final Steps**



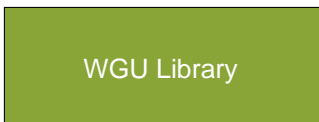
Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.

## **Student Support**

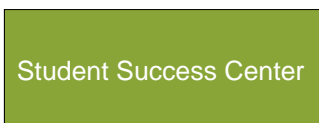
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