This course supports the assessments for UMC2. The course covers 5 competencies and represents 2 competency units.

Introduction

Overview
In Pathopharmacological Foundations for Advanced Nursing Practice, you will gain application skills by examining syndromes rather than looking at body systems independently. The course includes pathophysiology, the associated pharmacological treatments, and social and environmental impacts. Most students will need at least 6–8 weeks to accomplish the process-oriented competencies in the course.

There is both an objective assessment and a performance assessment associated with the content in this course. You are encouraged to look now at the performance assessment associated with this course. Then you can organize your notes and study habits and be prepared to advance quickly through the performance assessment as you prepare for the objective assessment.

Pathopharmacological Foundations for Advanced Nursing Practice is an integrated examination of five common and important disease processes:

- asthma
- heart failure
- obesity
- traumatic brain injury
- depression

These processes are relevant to advanced nursing practice because of their prevalence and impact on the healthcare system and the health of the nation.

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

- Competency 7002.1.1: Pathophysiology
  The graduate evaluates high volume, high impact disease processes, including associated pharmacological interventions and implications for advanced practice.
- Competency 7002.1.2: Evaluation of Pharmaceutical Impact
  The graduate analyzes pharmaceutical impacts, including physiological, psychological, financial, and lifestyle factors on the selected disease processes.
- Competency 7002.1.3: Managing Care Transitions
  The graduate evaluates salient pharmacological issues in managing patient care transitions.
- Competency 7002.1.4: Salience
  The graduate distinguishes between general information and relevant assessment findings to manage and minimize pathologies and risk factors to promote optimal patient
outcomes.

- Competency 7002.1.5: Care Management
  The graduate integrates relevant patient and population data to develop pathopharmacological management strategies for populations.

Nursing Dispositions Statement
Please review the Statement of Nursing Dispositions.

Course Mentor Assistance
As you prepare to successfully demonstrate competency in this subject, remember that course mentors 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 mentors are excited to hear from you and eager to work with you.

Successful students report that working with a course mentor is the key to their success. Course mentors 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 mentors act as a support system to guide you through the revision process. You should expect to work with course mentors for the duration of your coursework, and you are encouraged to contact them as soon as you begin. Course mentors 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.

Automatically Enrolled Learning Resources

You will be automatically enrolled at the activity level for the following learning resources. Simply click on the links provided in the activities to access the learning materials.

VitalSource E-Texts

The following textbooks are available to you as e-texts within this course. You will be directly linked to the specific readings required within the activities that follow.

**Pathophysiology**

Pathophysiology is the study of pathological changes in organ system function. It can be defined as the general study of the physical, biochemical, and mechanical manifestations of disease and their relation to underlying abnormalities or physiological disturbances. Pathophysiology attempts to explain the processes in the body that result in the manifestation of signs and symptoms of a disease.

**Pathophysiology**

This topic addresses the following competency:

- **Competency 7002.1.1: Pathophysiology**
  The graduate evaluates high volume, high impact disease processes, including associated pharmacological interventions and implications for advanced practice.

This topic highlights the following objectives:

- Identify key pathophysiology and pathological processes in selected disease processes.
- Recognize diagnostic features, signs, and symptoms of selected disease processes.
- Identify the inflammatory mechanisms involved in disease processes.
- Evaluate the state of the science related to the selected disease processes.
- Indicate how environmental, socioeconomic, and genetic/genomics factors impact the disease process.

**Review: Genes, Environment, and Common Diseases**
Review the influence of genetics and environment for common diseases.

Review the following resources as they relate the five disease processes you will focus on in this course (asthma, heart failure, obesity, traumatic brain injury, and depression)

- chapter 5 (“Genes, Environment-Lifestyle, and Common Diseases”) in Pathophysiology: The Biologic Basis for Disease in Adults and Children
- HealthyPeople.gov: Genomics

Asthma-Read: Background Information

Review basic pathophysiologic background information about asthma by responding to the following prompts as you read the materials listed below:

- Identify anatomical structures associated with the lower respiratory tract and their functions.
- Explain how the nervous system regulates airflow in the lower respiratory tract and how the process can be modified by drugs.

Read the following chapters in Pathophysiology: The Biologic Basis for Disease in Adults and Children:

- chapter 7 (“Innate Immunity: Inflammation”)
- chapter 33 (“Alterations of Cardiovascular Function in Children”)

Asthma-Explore: Guidelines

Identify key pathological processes and recommended treatments.

Explore the following website:

- Guidelines for the Diagnosis and Management of Asthma (EPR-3)

Asthma-Synthesize: Disease Processes

Synthesize information about the asthma disease process. Complete a table like the one below to indicate how asthma symptoms could affect each of these body systems.

<table>
<thead>
<tr>
<th></th>
<th>Inflammation</th>
<th>Airway Irritability</th>
<th>Airway Obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brain</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the several pages of information in the following resource to complete your table:

- Asthma

Asthma-Explore: Inflammation

Explore the inflammatory processes associated with asthma. Answer the following questions:
What is the main difference between acute and chronic inflammation of the bronchi?
Consider medications to avoid in asthma (e.g. NSAIDS, etc.). Why should certain medications be avoided?

Review the following website:

- **Partners Healthcare Asthma Center: Patient Resources**

**Asthma-Define: State of the Science**

Define the state of science as it relates to asthma. What are the allergens, air pollutants, chemicals, foods, etc. within your own community that may trigger asthma-related illnesses?

Begin with the following resources:

- **EPA: Asthma**
- **HHS: Clearing the Air: Asthma and Indoor Air Exposures**

**Asthma-Begin: Case Study: Part 1**

Read the following case study:

- **Asthma Case Study**

As you apply what you’ve learned to an asthma case study, answer the following prompts:

- Describe the course of the disease and include the effects on other body systems.
- Consider the pediatric patient in the scenario. What are the possible short-term and long-term effects that poorly treated asthma could have on his body systems?

**Heart Failure?Read: Background Information**

Review basic pathophysiologic background information about heart failure as you read the following chapters in *Pathophysiology: The Biologic Basis for Disease in Adults and Children*:

- **chapter 29** ("Alterations of Leukocyte, Lymphoid, and Hemostatic Function")
- **chapter 30** ("Alterations of Hematologic Function in Children")

**Heart Failure?Search: Terms**

Search your text or other resources to complete the following prompts:

- Define *preload* and *afterload*.
- Explain the relationships among the following terms:
  - Frank-Starling law
  - contractility
  - inotropic effect
  - cardiac remodeling
  - peripheral edema

**Heart Failure?Explore: WebMD**
While heart deterioration is part of the aging process, certain disease process can accelerate decreased cardiac function. Review the following contributors to heart failure. Describe briefly how they decrease cardiac function. Review your understanding of preload and afterload. Categorize the disease process into preload or afterload categories for the following conditions:

- coronary artery disease (CAD)
- mitral stenosis
- chronic hypertension
- diabetes mellitus

Search WebMD for reliable information that will help you address the instructions above.

Heart Failure?Begin: Case Study Part 1

Apply what you’ve learned to the following case study:

- Heart Failure Case Study

As you read the case study, answer the following prompts:

- Describe the pathophysiology of cardiac disease across the lifespan.
- Consider the pediatric patient in the scenario. What are specific cardiac issues with diagnosing and treating teenagers?

Heart Failure?Review: Check Your Understanding

After you have compiled your recommendations for this patient, read the suggestions in the following section of Heart Failure Case Study:

- Suggestions, Heart Failure Case Study: Part 1

Obesity?Define: Obesity

In your notes, explain the clinical diagnosis of obesity. You may want to add to or change this definition as you work through the sections in this course related to obesity. You can begin your definition by searching for information on the following websites:

- Mayo Clinic
- Obesity in America

Obesity?Review: Etiology

Review the following section about the etiology of obesity in Pathophysiology: The Biologic Basis for Disease in Adults and Children:

- “Obesity” (pp. 1447–1450) in chapter 41 (“Alterations of Digestive Function”)

Obesity?Watch: The Growing Problem

Watch the following video series "Why Are Thin People Not Fat":


Note: View the video in full screen at 720p for best results.

Also watch the following video “Tipping the Scales: A Documentary on Childhood Obesity”:

Note: View the video in full screen at 720p for best results.

Obesity?Read: Alterations of Hormonal Regulation

You should already have a comprehensive understanding of the pathophysiologic mechanisms of disease processes based on your previous studies and experiences.

As you read, scan for key principles. Make sure you understand how various organ systems are impacted by metabolic disorders. For example, you should be able to identify the pathophysiological effects of metabolic disorders on endocrine, cardiovascular, renal, and digestive systems.

Read the following chapter in *Pathophysiology: The Biologic Basis for Disease in Adults and Children*:

- chapter 21 (“Mechanisms of Hormonal Regulation”)

Obesity?Complete: Case Study Part 1

Read the following case study and write your recommendations for the patient:

- Obesity Case Study

After you have compiled your recommendations for this patient, read the suggestions in the following section of the case study:

- Suggestions, Obesity Case Study: Part 1

Obesity?Read: Health Disparities

Read the following section of the CDC’s *Health Equity Resource Toolkit for State Practitioners Addressing Obesity Disparities*:

- “Scope of the Problem” (pp. 9–12)

Obesity?Explore: Metabolic Syndrome

Metabolic processes are another aspect of the pathophysiology of obesity. Explore the following
guideline from the National Heart, Lung, and Blood Institute:

- AHRQ: Risk factor clustering and the metabolic syndrome

Traumatic Brain Injury? Read: Trauma

Review basic pathophysiologic background information about TBI as you read the following section in *Pathophysiology: The Biologic Basis for Disease in Adults and Children*:

- Chapter 18 (“Disorders of the Central and Peripheral Nervous Systems and the Neuromuscular Junction”)

The following 15 minute video gives similar information in a different format:

- Understanding Traumatic Brain Injury

Traumatic Brain Injury? Read: Chapter 16

Many body systems may present symptoms that result from TBI. Note the multiple and varied symptoms that may lead you to suspect TBI as you read the following chapter in *Pathophysiology: The Biologic Basis for Disease in Adults and Children*:

- Chapter 17 (“Alterations in Cognitive Systems, Cerebral Hemodynamics, and Motor Function”)

Traumatic Brain Injury? Summarize: Pathophysiology

Explore the following resources to differentiate characteristic symptoms of mild TBI and severe TBI:

- Traumatic Brain Injury (TBI)
- TraumaticBrainInjury.com
- Heads Up: Facts for Physicians About Mild Traumatic Brain Injury (MTBI)

Traumatic Brain Injury? Compare: Screening Tools

Compare and contrast the clarity and applicability of the following two screening tools. Determine which might be more useful for your clinical practice or patients you have worked with.

- What is the Glasgow Coma Scale?
- Rancho Los Amigos Scale

Depression? Read: General Audience Resources

Read the following resources, which give a comprehensive overview of depression for non-professional audiences:

- NIMH: Depression
- National Alliance on Mental Illness (NAMI) Major Depression Fact Sheet
- Live Strong (search for “depression”)
If the information in these sites differs, how do you evaluate which is more likely to be correct? Depression? Read: Nursing Resources

Review the overall characteristics and forms of depression from a more professional nursing perspective.

Read the following sections in *Pathophysiology: The Biologic Basis for Disease in Adults and Children*:

- chapter 19 (“Neurobiology of Schizophrenia, Mood Disorders, and Anxiety Disorders”)
- chapter 11 (“Stress and Disease”)
- chapter 15 (“Structure and Function of the Neurologic System”)

**Evaluation of Pharmaceutical Impact**

Evaluation of pharmaceutical impact is defined as the investigation of the pharmacodynamic and pharmaceutical impacts (including physiological, psychological, financial, and lifestyle factors) on selected disease processes and patients.

**Evaluation of Pharmaceutical Impact**

This topic addresses the following competency:

- Competency 7002.1.2: Evaluation of Pharmaceutical Impact
  The graduate analyzes pharmaceutical impacts, including physiological, psychological, financial, and lifestyle factors on the selected disease processes.

This topic highlights the following objectives:

- Identify the drug classes typically used to treat selected disease processes.
- Identify how drugs affect the mechanisms of disease processes.
- Identify the anticipated effect of the drugs used for treating the selected disease processes.
- Evaluate current treatment trends in pharmacotherapeutics related to treatment for the selected disease processes.
- Identify possible complementary and alternative therapies for the selected disease processes.
- Identify potential interactions among prescribed and over-the-counter medications that a patient may be using.
- Analyze factors that impact the effectiveness of pharmaceutical agents.
- Examine any special considerations for drug therapy for special patient populations.
- Identify medications used to treat the selected disorders with high risk for misuse or abuse.

**Review: Pharmacotherapeutics, Pharmacokinetics, and Pharmacodynamics**

Review the main principles of how pharmaceuticals impact the body.

Review the following chapter in *Drug Therapy in Nursing*:
## Asthma?Read: Background Information

Review basic pharmacological background information about asthma.

Read the following chapters in *Drug Therapy in Nursing*:

- chapter 13 (“Drugs Affecting Adrenergic Function”)
- chapter 14 (“Drugs Affecting Cholinergic Function”)
- chapter 34 (“Drugs Affecting the Upper Respiratory System”)
- chapter 35 (“Drugs Affecting the Lower Respiratory System”)
- chapter 48 (“Drugs Affecting Corticosteroid Levels”)

## Asthma?Synthesize: Drug Treatments

Synthesize information about the asthma drug treatments. Complete a table like the one below to indicate how asthma medications could affect each asthma symptom.

<table>
<thead>
<tr>
<th></th>
<th>Inflammation</th>
<th>Airway Irritability</th>
<th>Airway Obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steroidal anti-inflammatory drugs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Non-steroidal anti-inflammatory drugs (NSAIDS)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Beta agonists SABA as well as LABA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xanthine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anticholinergic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leukotriene receptor agonists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-allergic drugs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunomodulators</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You may want to use information in the following resource:

- Mayo Clinic: Asthma

## Asthma?Investigate: Treatments and Therapies

List at least 15 treatments and therapies for asthma that are reported on the following website:
**MedPage Today: Asthma Information Center**

Be sure to check both news stories and videos.

**Asthma?Investigate: Alternative Treatments**

Make a table to note at least 15 alternative treatments for asthma and potential interactions with prescribed medications. Include “natural” substances, such as the following substances, as well as any other combinations that you find:

- Boswellia
- spikenard
- licorice root
- yerba santa
- ma huang
- pineapple extract
- apples
- lemons/oranges
- ginger
- honey

The following websites may help get you started:

- [Natural HomeRemedies.com: Natural Home Remedies for Asthma](#)
- [The Homemade Medicine Home Remedies Site: Home Remedies for Asthma](#)
- [My Home Remedies: Home Remedies for Asthma](#)
- [Top 10 Home Remedies: Home Remedies for Asthma](#)
- [WebMD: Is There a Natural Cure for Asthma?](#)

Consider the following questions:

- How do you evaluate the validity of the claims on these or other Internet sites?
- How can you use this information to educate patients about their self-management?

**Asthma?Investigate: Other Factors that Can Affect Prevalence**

Investigate several resources to consider answers to the following questions:

- How does ethnicity affect asthma prevalence and why?
- How would an urban setting versus rural setting affect the prevalence of asthma?
- How would socioeconomics affect adequate treatment of asthma in both the adult and pediatric populations?

Here are some websites to get you started:

- [ScienceDaily](#)
- [Urban Institute: Race, Ethnicity, and Gender](#)
- [EurekAlert](#)
Asthma?Search: Potential Pharmaceutical Misuse

Since some asthma medications are stimulants, they may be misused or abused during sports by either the patient or teammates. What indications in the patient’s records, examination, or history could you use to investigate if this is a problem for this patient?

Review the following website:

- U.S. Food and Drug Administration : Drug Safety

Asthma?Synthesize: Medications

Synthesize your knowledge of asthma drug therapy, and explore more if you need more information to answer the following questions:

- Review drug calculation procedure. How do you need to adapt therapies to consider age, weight, ethnicity, and comorbidities of the patient?
- What other systems of the body would be most affected by asthma medications and their clearance? Why?

Asthma?Complete: Case Study Part 1

Review part 1 of the following case study to evaluate the pharmaceutical impact:

- Asthma Case Study

Answer the following questions:

- How do medications treat this disease?
- The patient was started on a high-flow nasal cannula at 100% oxygen.
  - Does this decrease his respiratory rate?
  - Does this increase his oxygen saturation?
  - How do his lungs sound on auscultation?
  - Does he have wheezing?
  - Is there evidence of rhonchi?
- The patient’s initial arterial blood gas indicates a low pH, high CO₂, and low oxygen content.
- Determine how his lungs are functioning.
- What do you expect to find?
- How has his elevated CO₂ levels affected his neurological status?
- Would you expect his brain functioning to change before and after the PICU treatment?
- Describe what you would expect from his heart sounds.
- Describe how his chest X-ray would look.
- What would you expect from the patient’s appearance once treatment has stabilized him? Breathing, heart rate, skin appearance, and comfort level?
- Would he likely maintain proper renal output while on antibiotic and antiviral medications? (Some antibiotics, particularly Vancomycin, can cause renal shutdown or renal insufficiency, as evidenced by bloody urine.)
Would you expect his urine to be proper in color and consistency?
Given the type of treatment provided to the patient, what would you expect from his fluid status?

**Heart Failure? Review: Drugs**

Review mechanisms of drug action in heart disease throughout *Drug Therapy in Nursing*. Especially review carefully the following chapters:

- chapter 28 ("Drugs Affecting Lipid Levels")
- chapter 29 ("Drugs Treating Heart Failure")
- chapter 30 ("Drugs Treating Angina")
- chapter 31 ("Drugs Affecting Cardiac: Rhythm")

Also review the following website:

- [RxList](http://www.rxlist.com)

**Heart Failure? Search: Terms**

How do the following drugs impact heart failure disease process?

- ACE inhibitors
- ARBs (angiotensin receptor blockers)
- diuretics, loop, thiazide
- beta blockers
- direct vasodilators
- cardiac glycosides
- phosphodiesterase inhibitors

How are the drug actions impacted by genetic factors? Read the following article:

- [Genomics and Drug Response](http://www.genomicsanddrugresponse.com)

**Heart Failure? Complete: Case Study Part 2**

Continue to apply what you've learned to the following case study:

- [Heart Failure Case Study](http://www.heartfailurecasestudy.com)

As you read the case study, answer the following questions:

- When taking a patient history, what specific questions would you ask the patient about medication use?
- Describe polypharmaceutical use/abuse and how it relates to cardiac issues in adolescents.
- What “drugs” could lead to cardiac issues in young people?

After you have compiled your recommendations for this patient, read the suggestions in the
following section of the case study:

- Suggestions, Heart Failure Case Study: Part 2

**Obesity?Complete: Case Study Part 2**

Refer back to the following case study:

- **Obesity Case Study**

Suppose that you have performed and ordered the necessary tests and found that the patient’s blood glucose level is 140 and her ketones are negative. How would you treat her?

You may want to answer this as you work through the other activities for this topic. After you have compiled your recommendations for this patient, read the suggestions in the following section of the case study:

- Suggestions, Obesity Case Study: Part 2

**Obesity?Explore: Clinician Perspective**

Review the objectives highlighted in the topic description for this topic ("Evaluation of Pharmaceutical Impact: Obesity"). With these objectives in mind, spend time researching the pharmaceutical impact of obesity using the following website:

- **American Family Physician: Obesity**

Which has more influence on your confidence in the findings: the website you find them on, or the date that an article or guideline was published?

**Obesity?Search: Pharmacotherapy**

Obesity may create complicating factors in many body systems, so pharmacotherapy needs to be considered in various ways:

- as it is used to treat obesity directly
- as it is needed to treat a comorbid condition
- as it is used for the comorbid condition may be affected by obesity (e.g. absorption issues or exacerbating obesity)

Search and review the pharmacological treatments related to obesity in *Drug Therapy in Nursing*. Read the following chapter and search for other references throughout the text:

- **chapter 1 ("Nursing Management of Drug Therapy")**

**Obesity?Search: Guidelines for Treating Patients**

The AHRQ guideline document listed below includes different treatment plans. Search the document to find the treatments that include pharmacotherapy. Make a chart comparing those recommendations with the drug therapies in the readings from the previous activity. Include the
side effects and contraindications of each pharmacotherapy.

Read the following guideline:

- **American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery medical guidelines for clinical practice for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient**

**Obesity?Care Plan: Guidelines for Comorbid Conditions of Patients**

Examine guidelines for at least three of the comorbid conditions listed in the “Recommendations” section of the following document. Write a care plan for a patient whose primary complaint is one of these conditions, but obesity is a complicating factor:

- **American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery medical guidelines for clinical practice for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient**

**Obesity?Develop: Nutritional Management Plan**

Review the pathophysiology of metabolic syndrome and glycemic index in the following chapter of *Pathophysiology: The Biologic Basis for Disease in Adults and Children*:

- **chapter 22 (“Alterations of Hormonal Regulation”)**

Describe the relationship between exercise, antioxidants, and glycemic index in the prevention and treatment of metabolic syndrome and diabetes mellitus.

Develop a nutritional management plan for a client that would decrease glycemic index. Consider dietary requirements of various cultures as you develop this plan.

**Traumatic Brain Injury?Read: Pharmaceutical Guidelines**

Read the following guidelines for medical management from AHRQ:

- **Guidelines or the acute medical management of severe traumatic brain injury in infants, children and adolescents (second edition)**

Create a table to quickly compare the guidelines:

<table>
<thead>
<tr>
<th>Intervention and Practices Considered in the Research that was reviewed</th>
<th>Recommendation for each Intervention or Practice</th>
<th>Quality of the Research leading to the Recommendation</th>
<th>Potential Benefits/Harms of the Intervention or Practice</th>
</tr>
</thead>
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<tr>
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</tbody>
</table>
Expand the table you created in the previous activity to include considered treatment for adults with TBI.

Use the following guidelines to complete your table:

- **Nursing management of adults with severe traumatic brain injury**

**Traumatic Brain Injury?Search: Drug Therapies**

Search in *Drug Therapy in Nursing* to find answers to the following questions:

- What body defense makes brain injury particularly resistant to drug therapy?
- What drug class reacts unexpectedly to this body defense?
- What is a particular danger in using exogenous vasopressin for acute care of brain injury patients?

You might start with the following two chapters:

- chapter 16 (“Drugs Treating Mood Disorders”)
- chapter 21 (“Drugs Treating Parkinson Disease and Other Movement Disorders”)

**Depression?Organize: Antidepressants**

Review mechanism of actions for the various antidepressants. Organize your information into a table like this:

<table>
<thead>
<tr>
<th>Antidepressant</th>
<th>Mechanism of action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Use the following resource to complete your table:
**Drug Therapy in Nursing**

Examine the following illustration. Explain from a pathopharmacology prospective where an anti-depressant medication may best act.

**Depression?Sort: Antidepressant Drug Categories**

Make a table to list all drugs that fall into specific antidepressant categories.

<table>
<thead>
<tr>
<th>Antidepressant Class</th>
<th>Drugs in this category</th>
<th>Route and Maximum Dose</th>
<th>Adverse Affects</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSRI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atypical anti-depressants (SNRI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAO</td>
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</tr>
</tbody>
</table>

**Depression?Explore: Complementary and Alternative Therapies**

Many different organizations have interest in the treatments for people with depression. Explore the following site from the American Psychological Association (APA). List at least five different types of therapies mentioned on this site:

- [APA: Depression](#)

**Salience**

Salience is the state or condition of being prominent. It allows the practitioner to distinguish between general information and relevant assessment findings to manage and minimize pathologies and risk factors in order to promote optimal patient outcomes.

**Salience**

This topic addresses the following competency:

- Competency 7002.1.4: Salience
  The graduate distinguishes between general information and relevant assessment findings to manage and minimize pathologies and risk factors to promote optimal patient outcomes.

This topic highlights the following objectives:

- Evaluate the patient’s current health status with regard to physical function,
pharmacological therapies, and disease processes.
- Prepare a plan of intervention for adverse drug reactions to determine that nurses are recognizing changing signs and symptoms and intervening appropriately.
- Identify the key components of disease status that may impact the patient’s quality of life.
- Develop cost-effective, patient-centered strategies to optimize outcomes for patients with similar pathologies.

**Asthma? Read: Patient-Centered Care**

Read the following article:

- Patient-centered care and its effect on outcomes in the treatment of asthma

This article examines research regarding finding the best practices for patients with asthma. It includes an examination of provider practices, as well as barriers to compliance.

As you read the article, identify specific instances that call for the providers to be alert to the full impact of their care and care plans. Attending to the patient as a whole person within a physical, social, and lifestyle environment requires remaining alert to many factors, whether they are obvious and salient or more obscure.

**Asthma? Begin: Case Study Part 2**

Read part 2 of the following case study:

- Asthma Case Study

Answer the following questions:

- Summarize the key indicators affecting treatment (consider the patient’s health status before, during, and after treatment.)
  - Consider physical function, pharmacological therapies, and the disease process.
  - Review treatment options and identify which treatments increased efficacy of outcomes.
- Summarize the standard asthma treatment pathway used in the case study and efficacy of care of the child in this scenario, who is presenting in the ER with moderate to severe asthma symptoms.
- Based on your observations, what could have been done by the family or healthcare providers to reduce severity and recurrence of the child’s asthma symptoms short-term and long-term? Develop an asthma management plan.

**Heart Failure? Complete: Case Study**

Continue to apply what you’ve learned to the following case study to consider inpatient care:

- Heart Failure Case Study

As you review the case study, consider if the nurse attended to following patient issues:
- How has her fast heart rate affected her neurological status? A heart beating too fast will affect oxygen circulation to the brain and other organs.
- How does her heart sound?
- How do her lungs sound?
- How is she able to move?
- Is she able to sit up?
- If she is permitted to eat, does she have any problems with fine motor skills?
- Is she completely off sedation medication? If so, what signs of withdrawal do you expect to see, if any?
- How are her kidneys functioning?

Review the following section of the case study:

- Heart Failure Case Study: Part 1
- Obesity?Complete: Case Study Part 3

Refer back to the following case study:

- Obesity Case Study

Complete the following:

- Evaluate the patient’s current health status with regard to physical function, pharmacological therapies, and disease processes (obesity and also any comorbid conditions). What are the key components of obesity that impact this woman’s quality of life?
- As the nurse for this patient, describe how you would incorporate emerging genetic/genomic evidence in providing advanced nursing care. How would you use the information you know about obesity to develop an appropriate care plan for the patient?
- Explain how polypharmaceutical use/abuse relates to obesity.
- Prepare a plan of intervention that will minimize adverse drug reactions for the patient. How would you recognize any changing signs and symptoms and intervene appropriately if she did have an adverse reaction to a drug?

After you have compiled your recommendations for this patient, read the suggestions in the following document:

- Suggestions, Obesity Case Study: Part 3

Traumatic Brain Injury?Search: Acute and Long Term

The symptoms that patients exhibit are the main input that nurses use to plan and carry out care plans.

Search the resources you have used in previous activities about TBI to find answers to the following questions:
How do acute symptoms for brain injured patients differ from long-term symptoms?
Are acute symptoms likely to reoccur in a long-term patient?
What comorbid symptoms may occur in a long-term patient?

**Traumatic Brain Injury? Watch: Living with a Traumatic Brain Injury**

The following 30-minute video shows the dramatic range of effects and how TBI affects quality of life for four different patients:

- Living with Traumatic Brain Injury

While you watch, make notes about:

- the education that you’ll need to give your patients about expected issues they will likely face in day-to-day living,
- possible coping mechanisms that these patients have used, and
- the roles and specialties of the various members of the care team who are involved in creating and managing the care plan.

**Depression? Examine: Impacts in a Diagnosis**

In completing a health assessment on an individual you suspect may be depressed, describe how each of the following may impact your findings:

- drugs, both prescribed and illicit
- glucocorticoids
- oral contraceptives
- levodopa
- vitamin B deficiency
- thyroid deficiency
- ETOH use

What baseline labs would be important to obtain prior to ordering any type of anti-depressant, and why?

**Managing Care Transitions**

The term *care transitions* refers to the movement of patients between their healthcare provider and the hospital setting as their condition and care changes during the course of an acute or chronic illness.

**Managing Care Transitions**

This topic addresses the following competency:

- Competency 7002.1.3: Managing Care Transitions
  The graduate evaluates salient pharmacological issues in managing patient care transitions.

This topic highlights the following objectives:
Indicate ways in which different members of the healthcare team contribute to pharmacotherapeutic management when patients transition from one care setting to another.

Identify essential aspects of medication reconciliation when a patient transitions from one inpatient care setting to another.

Identify essential aspects of medication reconciliation when a patient transitions from an inpatient care setting to outpatient care.

Identify essential components of a drug management plan for patients as they are dismissed from hospital care to a home setting.

Identify essential components of a drug management plan for patients as they are dismissed from hospital care to a home setting.

**Read: Managing Patient Care Transitions**

Indicate ways in which different members of the healthcare team contribute to pharmacotherapeutic management when patients transition from one care setting to another.

Consider assessment of risk domain:

- How could one gather historical information once the patient is discharged from hospital care?
- How many unplanned trips were made to urgent care facilities, ER visits?
- How many times did the patient have to be given steroids for uncontrolled symptoms?

Review the following article from the WGU Library E-Reserves about care transitions and handoffs:

- "The Effects of Patient Handoff Characteristics on Subsequent Care a Systematic Review and Areas for Future Research"

**Read: Medication Management**

Using the ASHP-APhA Medication Management in Care Transitions Best Practices booklet, respond to the following prompts:

- What is unique about the medication management plan for patients with asthma when they are transitioning to home or self-care?
- Describe the consequences if a medication management plan is not completed.

**Asthma? Continue: Case Study Part 2**

Read part 3 of the following case study:

- [Asthma Case Study](#)

Prior to the patient discharge home, you will need to consider the following questions:

- What are the typical over-the-counter (OTC) medications the patient’s parents might
give him? Why?
- How could the OTC meds react with and/or interfere with his prescribed medications?
- What are the potential side effects of these medications?
- Are healthy bowel sounds expected early in treatment or after discharge?
- Is he likely to develop diarrhea (antibiotics especially, with prolonged use, may cause a condition that requires treatment)?
- What medications will he be discharged home with?
- How could the patient’s care continue for best healthcare outcomes? Provide examples.
- As you plan for this patient to go home, review the parent question results in the case study and determine how to prevent further exacerbations of this disease.

Heart Failure?Plan: Care Transitions

Review the following websites for information about planning care transitions and care management for a heart failure patient:

- IHI: “Good Heart Failure Care Follows Patients Home”
- Right at Home: “Hospital System Reduced Heart Failure Readmissions with Better Care Transitions”

Heart Failure?Complete: Case Study Care Transitions

Describe a plan for discharge for the patient in the following case study:

- Heart Failure Case Study

Include pertinent information you would discuss with her parents. Consider the following issues:

- What medications would this patient be discharged with?
- Why is it important to understand what other medications or alternative treatments the patient is taking?
- What teaching must occur?
- How would you include talking about not sharing each other’s medications?
- How has her fast heart rate affected her neurological status?

Read the suggestions in the following section of the Heart Failure Case Study:

- Suggestions, Heart Failure Case Study: Part 4

Obesity?Complete: Case Study Part 4

Refer back to the following case study:

- Obesity Case Study

Consider how you would help this patient receive the treatment she needs:
- How do you approach this young woman, who believes she is not at risk of developing any diseases, who does not believe that her blood sugar is “too high,” and who does not have any desire to see a physician?
- How do you approach this same young woman who wants to change herself for the better?
- How can you help with care transitions? How would different members of the healthcare team contribute to the health outcomes of this patient?
- How do you incorporate other issues, physical or not, into helping this young woman become more healthy?
- What can you teach the patient about obesity as the nurse?
- How do you educate and promote change with your client?
- How would you ensure that medication is handled appropriately as the patient transitions from one healthcare setting to another?
- Based on what you have learned throughout the case study how would you create a plan for this client to assist her with their disease? Include a drug management plan for the patient.

You may want to review the information you have studied in earlier topics as you answer these questions. After you have compiled your recommendations for this patient, read the suggestions in the following section of the case study:

- Suggestions, Obesity Case Study: Part 4

**Traumatic Brain Injury? Compare: Patient Education Plans**

In a previous activity, you made notes about the education that you’ll need to give your patients about expected issues they will likely face in day-to-day living and possible coping mechanisms.

Compare your notes and recommendations with the ACE Care Plans and Information for Patients linked at the bottom of the following webpage from CDC:

- **Heads Up: Brain Injury in Your Practice**

What do you think about the reading level of these care plans?

- Should they be given to patients for patient education? Why or why not?
- Should they be given to caregivers as a care plan? Why or why not?
- Can you create a simpler form for patients that would still convey the key information?

Compare your simpler form with recommendations found on the following web page:

- **Heads Up to Schools: Know your Concussion ABCs**

**Depression? Explore: Cultural Differences and Treatment**

At the bottom of the brief webpage from NAMI linked below, there are several links that describe how depression manifests and is treated in different demographic groups.
List reasons why depression and other mental illness is often ignored in the following populations of patients:

- Asian community
- African American community
- Hispanic community
- American Indian and Alaska Native communities

Explore the many links on the following website:

- [National Alliance on Mental Illness (NAMI): What is depression?](#)

**Care Management**

Care Management refers to a set of evidence-based, integrated clinical care activities that are tailored to individual patients. It ensures that each patient has his or her own coordinated plan of care and services. The care plan, which is developed collaboratively by the patient and healthcare providers, is designed and implemented to optimize each patient’s health status and quality of life.

**Care Management**

This topic addresses the following competency:

- Competency 7002.1.5: Care Management
  The graduate integrates relevant patient and population data to develop pathopharmacological management strategies for populations.

This topic highlights the following objectives:

- Identify the pharmacological treatment of patients with similar disease processes from diagnosis and prognosis to post-treatment.
- Indicate likely outcomes of pathopharmacological treatments for populations with selected disease processes.
- Justify the course of pathopharmacological interventions for populations with selected disease processes.
- Identify the socioeconomic impact of selected disease processes with regard to a specific population.
- Evaluate available financial resources for managing care in a specific patient population.
- Identify potential gaps in care related to the adequacy of fiscal resources for managing care in a specific patient population.

**Asthma? Search: Best Practices**

Review asthma disease processes. Research best practices for the management of the disease.

Consider following patient populations and the similarities of disease manifestations as it pertains to asthma.
• pediatric
• young adults
• smokers
• individuals with comorbid respiratory conditions such as chronic obstructive pulmonary disease (COPD), heart disease, etc.

Search the following resources:

• Agency for Healthcare Research and Quality (AHRQ): 2011 Healthcare Quality Report
• Medscape

Asthma?Search: Local Resources

Locate state and local agencies and resources in the area where you practice for referral of patients with asthma or pulmonary disorders.

Asthma?Apply: Population Case Management

The incidence of asthma increases in areas high in environmental triggers or in populations with genetic predispositions.

Review your notes and the following case study:

• Asthma Case Study

Answer the following questions:

• What are the most common classes of medications prescribed for asthma?
• Conduct an Internet search to look for standards of care for asthma.
• What organizations determine standards of practice (i.e., Department of Health, CDC, WHO, etc.)?
• What is the social impact of asthma?
  □ How does asthma affect the patient, their family, and communities?
• What is the overarching cost of unmanaged care?
• Consider environmental, financial, social, and political implications.
• What happens when there is a medication shortage or natural disaster?
• If parents will not stop smoking, what will most likely happen with the child’s asthma? Why?
• In what ways can regular care from a primary care physician change the short-term and long-term expected health outcomes for this child?
• What are the ethics related to this child’s long-term care?
• What happens if the financial burden to care for this child becomes too great for the family or the state?
• What happens without medications if the body weakens?
• What if there is no longer any Medicare or Social Security?
• What choices for medical care and treatment will be offered ten years from now?
• What do you expect the long-term outcome to be for the child in the case study?
• When the child becomes an adult and is no longer under parental guardianship, what
happens if he is too debilitated from his long-term asthma to be able to work?

**Heart Failure?**

View: The Impact on Asian Americans and Pacific Islanders

Genetics, lifestyle factors, and environment all impact the incidence of heart disease.

View the following slideshow from National Heart, Lung, and Blood Institute:

- [The Impact of Heart Disease on Asian Americans and Pacific Islanders](#)

**Heart Failure?**

Explore: Resources for Long-Term Planning for Patients

Explore the following resource for ideas about care planning in your practice:

- [The American Heart Association: Circulation: ACC/AHA Practice Guidelines](#)

Review the following article from the [WGU Library E-Reserves](#) related to care planning in your community:

- National Heart, Lung, and Blood Institute: Access to Timely and Optimal Care of Patients with Acute Coronary Syndromes: Community Planning Considerations

**Obesity?**

Watch: Patient Education Videos

Patient education is very important to helping patients manage their disease. As you watch the following videos, think about what you can create or use in patient education:

- [The Real Bears](#)
- [23 and 1/2 Hours](#)

**Obesity?**

Explore: Contributing Factors

Explore the nutritional choices in the average American diet. What factors contribute to obesity? Consider access to healthy foods, finances, knowledge, etc. Explain some of the physical factors that contribute to obesity, such as lack of sleep, poor nutrition, lack of exercise, and other concomitant diseases that affect the body’s ability to lose weight or maintain a healthy weight.

Also explain some of the social and financial factors that contribute to obesity and diabetes.

Refer to resources you have used in earlier activities to explain some causes of obesity. How would the information you have gathered in this activity affect the way you respond to the patient in the obesity case study in previous activities?

**Obesity?**

Explore: Patient Education Materials

Explore the resources available from the National Heart, Lung, and Blood Institute:

- [Obesity Education Initiative (OEI)](#)

**Traumatic Brain Injury?**

Explore: CDC Website
Explore the links on the following website from CDC. Note especially the risk groups. How do preventive strategies differ for different risk groups?

- **Injury Prevention & Control: Traumatic Brain Injury**
  
  **Traumatic Brain Injury?Explore: Research**

Explore the following two websites and note the progress that research is adding to TBI care:

- **NINDS Traumatic Brain Injury Information Page**
- **Traumatic Brain Injury Research**

**Depression?Recommend: Care Management**

Review the following depression guidelines from the AHRQ. Create a recommended treatment and care management team for a patient that you might see in your practice.

- **AHRQ: Depression. The treatment and management of depression in adults**

**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 them now.

**Course Support**

Select the Course Support navigation link to access button that will take you to the following resources: Course Feedback, WGU Library, Student Success Center, and the Center for Writing Excellence.

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