Western Technical College

10515173  Respiratory Pharmacology

Course Outcome Summary

Course Information

Description
Examines basic pharmacology principles, drug dosage, and calculations. Medications for inhalation including mucolytics, bronchodilators, and anti-inflammatories. Also includes cardiac drugs, anesthetic drugs, neuromuscular blockers, and antimicrobials.

Career Cluster
Health Science

Instructional Level
Associate Degree Courses

Total Credits
3.00

Textbooks


Course Competencies

1. **Apply basic pharmacology principles to medication management**
   
   **Assessment Strategies**
   1.1. in an oral or written response to scenarios and/or questions

   **Learning Objectives**
   1.a. Define key terms related to pharmocologic principles
   1.b. Differentiate systemic effects and local effects
   1.c. Differentiate loading dose and maintenance dose
   1.d. Differentiate therapeutic, toxic, and lethal dose
   1.e. Discuss principles of drug poisonings, adverse drug reactions, and various undesirable drug effects
   1.f. Describe the processes of drug absorption, distribution, metabolism and elimination

2. **Compare and contrast drug forms, routes of administration and vehicles**
   
   **Assessment Strategies**
   2.1. in an oral or written response to scenarios and/or questions

   **Learning Objectives**
   2.a. Discuss advantages and disadvantages of different routes of drug administration
   2.b. Determine the correct route of drug delivery based on patient condition
   2.c. Relate route of administration to onset of action

3. **Calculate medication dosage**
   
   **Assessment Strategies**
3.1. by performing dosage calculations

Learning Objectives
3.a. Calculate dosages based on weight
3.b. Interpret and use medical abbreviations pertaining to medication administration
3.c. Perform conversions between units of measure in the metric and English systems
3.d. Calculate the strength of solutions in percentage and ratio form

4. Examine the pharmacodynamics of mucolytics, expectorants, surfactants, and antitussives

Assessment Strategies
4. in an oral, written, or graphical response to scenarios and/or questions

Learning Objectives
4.a. Classify and state the actions of related drugs
4.b. Provide examples of when, how and to whom drugs may be administered including age specific dosage
4.c. Explain the side effects and special considerations associated with the drugs
4.d. Describe how surface tension relates to oxygenation and work of breathing
4.e. Define key terms related to mucokinetic and surfactant agents

5. Examine the pharmacodynamics of bronchodilators

Assessment Strategies
5. in an oral, written, or graphical response to scenarios and/or questions

Learning Objectives
5.a. Classify the three pharmacologic methods for bronchodilation (sympathomimetic, anticholinergic, and xanthine) and the mode of action of each
5.b. Describe the side effects and special considerations associated with these drugs
5.c. Describe appropriate techniques for monitoring the patient's response to bronchodilator therapy
5.d. Recommend appropriate bronchodilator therapy for various patients situations including age, drug dosage, frequency, and route of delivery
5.e. Describe neurologic control of bronchial smooth muscle including sympathetic and parasympathetic nerves, their chemical mediators, and how bronchodilation occurs

6. Examine the pharmacodynamics of anti-inflammatoriestheroidal and non steroidal

Assessment Strategies
6. in an oral, written, or graphical response to scenarios and/or questions

Learning Objectives
6.a. Classify and state the actions of anti-inflammatory and antiasthmatic drugs
6.b. Provide examples of when, how and to whom drugs may be administered including age specific considerations
6.c. Discuss the side effects and special considerations associated with the administration and use of anti-inflammatoriestheroidal and non steroidal
6.d. Describe the physiology of corticosteriods

7. Examine the pharmacodynamics of cardiac drugs, vasodilators, vasoconstrictors, diuretics

Assessment Strategies
7. in an oral, written, or graphical response to scenarios and/or questions

Learning Objectives
7.a. Classify and state the action of drugs used to treat cardiovascular insufficiency
7.b. Provide examples of when, how and to whom drugs may be administered
7.c. Discuss the side effects and special considerations associated with the use of cardiovascular drugs
7.d. Relate cardiovascular physiology to pharmacologic treatment of acute coronary syndrome, arrhythmias, and heart failure

8. Examine the pharmacodynamics of anesthetics, muscle blockers, analgesics, sedatives, hypnotics, and tranquilizers

Assessment Strategies
8. in an oral, written, or graphical response to scenarios and/or questions
Learning Objectives
8.a. Classify and state the actions of the drugs
8.b. Provide examples of when, how and to whom drugs may be administered
8.c. Discuss the side effects and special considerations associated with these drugs
8.d. Describe the implications of using the drugs and the possible effect on the cardiopulmonary status of the patient

9. Examine the pharmacodynamics of antimicrobials, antivirals, antiinfectives, and vaccines

Assessment Strategies
9.1. in an oral, written, or graphical response to scenarios and/or questions

Learning Objectives
9.a. Classify and describe the actions these drugs
9.b. Provide examples of when, how and to whom drugs may be administered
9.c. Discuss the side effects and special considerations associated with these drugs
9.d. Discuss the effects and possible side effects of these drugs on the cardiopulmonary status of the patient