J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: RTH 145 **Credits:** 1

Course Title: Pharmacology for Respiratory Care I

Course Description: Presents selection criteria for the use of, and detailed information on, pharmacologic agents used in pulmonary care. Prerequisite: Completion of the Health Science Career Studies Certificate Respiratory Therapy pathway and acceptance into pre-clinical courses. Lecture 1 hour per week.

General Course Purpose: Presents selection criteria for the use of, and detailed information on, pharmacologic agents used in pulmonary care.

Course Prerequisites and Co-requisites:
Prerequisite: Completion of the Health Science Career Studies Certificate Respiratory Therapy pathway and acceptance into pre-clinical courses.

Student Learning Outcomes:
Upon completing the course, the student will be able to

a. Define basic concepts and selected background information useful in pharmacological treatment of respiratory disease and critical care;
b. Discuss the interrelationships of the three phases of drug action;
c. Discuss the pharmaceutical phase for delivery of inhaled therapeutic aerosol drugs;
d. Calculate drug doses from prepared-strength formulations such as liquids and of drug doses from solutions whose concentrations are expressed as a percentage-strength;
e. Compare adrenergic bronchodilators. Explain the clinical indications and the mechanism of action for these drugs. Assess patients for adverse side effects;
f. Compare Anticholinergic and Xanthine bronchodilators. Explain the clinical indications and the mechanism of action, and assess patients for adverse side effects;
g. Discuss the role of anti-inflammatory medications when administered for airway inflammation in asthma;
h. Explain the clinical indications and the mechanism of action for other drugs, such as anti-infective agents and surfactant agents, administered via the respiratory system. Assess patients for adverse side effects;
i. Discuss the mucociliary system and the nature of mucus. Discuss mucous-controlling pharmacological agents used in the treatment of respiratory secretions and their mechanisms of action. Assess patients for clinical indications and adverse reactions; and
j. Explain the role of Leukotrienes, their clinical indications and mechanism of action.

Major Topics to Be Included:
The Pharmacology for Respiratory Care course will:

a. Introduce and define basic concepts and selected background information useful in pharmacological treatment of respiratory disease and critical care.
b. Provide an overview of the interrelationships of the three phases of drug action.
c. Offer a comprehensive consideration of the pharmaceutical phase for delivery of inhaled therapeutic aerosol drugs.

d. Practice calculating problems of drug doses from prepared-strength formulations such as liquids and of drug doses from solutions whose concentrations are expressed as a percentage-strength.
e. Guide learners in comparing adrenergic bronchodilators, explaining the clinical indications and the mechanism of action, and assessing adverse side effects.
f. Assist learners in comparing Anticholinergic and Xanthine bronchodilators, explaining the clinical indications and the mechanism of action, and assessing adverse side effects.
g. Assist learners in forming a basis for discussion of airway inflammation in asthma and the use of anti-inflammatory drugs.
h. Distinguish among other miscellaneous drugs administered via the respiratory system such as anti-infective agents and surfactant agents.
i. Provide a review of the mucociliary system and the nature of mucus will be conducted as a basis for discussing mucous-controlling pharmacological agents used in the treatment of respiratory secretions.
j. Assist learners in the mediating actions of Leukotrienes.

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