



BAKER COLLEGE

STUDENT LEARNING OUTCOMES

PTA 2350 Cardiopulmonary Rehab
2 Semester Credit Hours

Student Learning Outcomes and Enabling Objectives

At the completion of this course, the student will be able to perform the following outcomes with a minimum competency of 77% (C+) or better.

1. Discuss the anatomy and physiology of the cardiopulmonary systems as it relates to the development of various cardiac and pulmonary conditions.
 - a. Describe the structure and function of the heart, vessels, and lungs in a healthy individual
 - b. Explain the normal blood flow through the heart and lungs allowing for appropriate oxygenation to all body systems
 - c. Describe the normal conduction system of the heart allowing for normal systole and diastole
 - d. Explain the process of ventilation in terms of the mechanics of inhalation and exhalation and how the muscular and nervous systems are involved
2. Describe the diagnosis and medical management for the common cardiopulmonary pathologies including, angina pectoris, hypertension, aneurysm, chronic venous insufficiency, heart disease, myocardial infarction, COPD, asthma, emphysema, chronic bronchitis, and pneumonia
 - a. Describe the etiology, clinical manifestations, and complications of the above listed disorders
 - b. Discuss common laboratory tests and diagnostic procedures used to diagnose the above listed disorders
 - c. Identify common medical procedures for vascular, airway, and lung diseases and the impact on physical therapy treatment
 - d. Explain the pharmacological management of common cardiopulmonary pathologies and the effect on patient care
3. Examine cardiopulmonary physical therapy tests and measures commonly used to assess for appropriateness of care and to monitor the patient's response to exercise and various treatment techniques

- a. Demonstrate the ability to measure and document patient heart rate, blood pressure, respiration rate, pulse oximetry, and other signs of cardiopulmonary health at rest, with positional changes, and with exertion
 - b. Demonstrate the ability to effectively identify each lung segment and properly auscultate lung sounds
 - c. Perform various functional outcome measures to evaluate patient's current level of function and change in function as a result of cardiopulmonary interventions.
4. Develop a progressive treatment plan for the management of common cardiac pathologies, within the plan of care of the physical therapist.
 - a. Investigate various forms of exercise tolerance testing and how the results affect treatment selection
 - b. Compare and contrast various forms of conditioning exercise training including aerobic, endurance, and resistive training
 - c. Determine appropriate intensity, duration, frequency, and progression and or regression based on patient's medical condition, phase of recovery, and response to exercise
 - d. Explain the contraindications and precautions for all forms of cardiac conditioning
5. Demonstrate competence in performing pulmonary rehab and airway clearance techniques to increase oxygenation and maximize ventilation for patients with respiratory conditions
 - a. Instruct patient in appropriate postural drainage positions to maximize respiratory status
 - b. Perform percussion and vibration techniques to improve the mobility of mucous and secretion transport
 - c. Instruct patients in breathing exercises to improve chest mobility and oxygenation
 - d. Instruct patients in coughing techniques to safely and effectively remove sputum and mucous from lungs
 - e. Instruct patient in pulmonary rehab techniques including aerobic and resistive training, inspiratory muscle training, paced breathing, energy conservation techniques, and smoking cessation.

Big Ideas and Essential Questions

Big Ideas

- Foundations of cardiopulmonary systems
- Diagnosis and medical management of common cardiopulmonary disorders
- Cardiopulmonary physical therapy tests and measures
- Development of an individualized cardiac rehab program

- Airway clearance techniques

Essential Questions

1. How does the knowledge of the anatomy and physiology of the cardiopulmonary systems lay the foundation for effective physical therapy management?
2. What are the diagnosis procedures, clinical manifestations, and medical management, for common cardiopulmonary diagnoses?
3. What physical therapy tests and measures do PTAs use to effectively determine appropriate cardiopulmonary treatment techniques and effectiveness of care?
4. How does a physical therapist assistant create an effective, individualized cardiac rehab program to address cardiac conditions?
5. What techniques can a physical therapist assistant utilize to promote clearing of secretions and optimal oxygenation and ventilation?

These SLOs are approved for experiential credit.

Effective: Fall 2020