

STANDARD COURSE OUTLINE

RESP 2112

Cardiopulmonary Diagnostics

PREREQUISITE: Admission into the Respiratory Therapy (RT) Program.

COURSE DESCRIPTION: This course focuses on the equipment and procedures used to diagnose and manage cardiopulmonary diseases. Emphasis will be placed on pulmonary function tests and the analysis of arterial blood gases.

CREDIT HOURS: 2 credit hours / may transfer to other respiratory therapy programs.

TARGET AUDIENCE: Students admitted to the RT Program.

RESOURCE MATERIAL: Egan's Fundamentals of Respiratory Care
Wilkins; 8th Edition, 1999, Mosby

COURSE OBJECTIVE:

Upon successful completion of this course, the student will

1. Review the Following from the Patient Record;
 - A. Pulmonary function results [(NBRC Combined Examination Matrix (CEM) I-A-4)]
 - B. Blood gas results (CEM I-A-5)
 - C. Imaging studies (radiographic, CT, MRI, PET, V/Q scan, angiogram) (CEM I-A-6)
 - D. Noninvasive monitoring (capnography and pulse oximetry) (CEM I-A-1-d)
2. Collect and Evaluate Additional Pertinent Clinical Information
 - A. Review chest radiograph to determine quality of imaging (patient identification, positioning, exposure) (CEM C I-B-6-a)
 - C. Presence of or change in pneumothorax or subcutaneous emphysema, other extrapulmonary air, consolidation and/or atelectasis, pulmonary infiltrates (CEM I-B-6-c)
 - D. Presence and position of foreign bodies (CEM I-B-6-e)
 - E. Position of or change in, hemidiaphragms, hyperinflation, pleural fluid, pulmonary edema, mediastinal shift, patency and size of major airways (CEM I-B-6-f)
3. Perform the Following Procedures;
 - A. Pulmonary function laboratory studies (flows, volumes, pre- and post bronchodilator) (CEM I-B-7-j)

4. Perform Quality Control Procedures for;
 - A. Blood gas analyzers, co-oximeters, and sampling devices (CEM II-C-1)
 - B. Pulmonary function equipment (CEM II-C-3)
5. Evaluate and Monitor Patient's Objective and Subjective Responses to Respiratory Care;
 - A. Interpret blood gas and co-oximetry results (CEM III-E-4))

TOPICAL OUTLINE:

This course includes (but is not limited to) the following topics:

- Module 1: Arterial Blood Gas Analysis/Hemoximetry
 - A. Acid-base balance
 - B. Oxygenation
 - C. Interpretation
 - D. Blood gas analyzers
 - E. Hemoximetry
 - F. Quality control
- Module 2: Pulmonary Function Testing
 - A. Purpose of pulmonary function testing
 - B. Normal values
 - C. Pulmonary function equipment
 - D. Obstructive and restrictive disorders
 - E. Interpreting the normal spirogram
 - F. Specialized pulmonary function studies
 - G. Clinical interpretation of pulmonary function studies
- Module 3: Radiographic Studies
 - A. Chest X-Ray
 - B. CT scan
 - C. MRI
 - D. PET scan
 - E. V/Q scan
 - F. Angiogram
- Module 4: Noninvasive Monitoring
 - A. Capnography
 - B. Pulse Oximetry
 - C. Transcutaneous O₂/CO₂