



Western Technical College

## 10515172 Respiratory Therapeutics 2

### Course Outcome Summary

#### Course Information

<b>Description</b>	Introduces therapeutic procedures including arterial puncture, bronchial hygiene, lung expansion therapy, and pulmonary rehabilitation. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care.
<b>Career Cluster</b>	Health Science
<b>Instructional Level</b>	Associate Degree Courses
<b>Total Credits</b>	3
<b>Total Hours</b>	72

#### Textbooks

*Egan's Fundamentals of Respiratory Care*. 12th Edition. Copyright 2021. Kacmarek, Robert M., James K. Stoller and Albert J. Heuer. Publisher: Elsevier Science. **ISBN-13:** 978-0-323-81121-7. Required.

#### Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Cultivate Passion: Expand a Growth-Mindset
3. Cultivate Passion: Increase Self-Awareness
4. Live Responsibly: Develop Resilience
5. Live Responsibly: Embrace Sustainability
6. Live Responsibly: Foster Accountability
7. Refine Professionalism: Act Ethically
8. Refine Professionalism: Improve Critical Thinking
9. Refine Professionalism: Participate Collaboratively
10. Refine Professionalism: Practice Effective Communication

## Program Outcomes

1. Apply respiratory therapy concepts to patient care situations.
2. Demonstrate technical proficiency required to fulfill the role of a Respiratory Therapist.
3. Practice respiratory therapy according to established professional and ethical standards.

## Course Competencies

### 1. Perform arterial puncture

#### Assessment Strategies

- 1.1. by performing arterial puncture in a simulated patient setting
- 1.2. by answering questions in oral or written format

#### Criteria

*Your performance will be successful when:*

- 1.1. you perform all relevant steps on the procedure checklist
- 1.2. you obtain appropriate sample
- 1.3. you indicate possible sources of error, complications or contamination
- 1.4. you handle sample in accordance with standard precautions
- 1.5. you collect pertinent clinical information

#### Learning Objectives

- 1.a. State how to obtain, process and analyzed arterial blood samples.
- 1.b. List the hazards, complications, and possible adverse reactions of the procedure.
- 1.c. Describe the possible sampling sites and modifications of the procedure to each site.
- 1.d. Describe the purpose of the modified Allen's Test and perform the procedure.
- 1.e. Perform all relevant steps of an arterial puncture.
- 1.f. Demonstrate proper handling of the sample in order to avoid contamination and sources of error in the sample.
- 1.g. Demonstrate proper use of standard precautions to protect the healthcare worker collecting the arterial sample.

### 2. Perform airway clearance therapies (e.g. bronchial hygiene)

#### Assessment Strategies

- 2.1. given various patient scenarios
- 2.2. by answering questions in oral or written format
- 2.3. by performing techniques in a simulated patient setting

#### Criteria

- 2.1. you perform all relevant steps on the procedure checklist
- 2.2. assessment includes review of patient data and recommendation of additional data if needed
- 2.3. assessment supports airway clearance technique selected
- 2.4. assessment supports airway clearance equipment selected
- 2.5. assessment follows available clinical practice guidelines
- 2.6. assessment includes appropriate outcome assessment for technique selected
- 2.7. you use airway clearance equipment
- 2.8. you assemble airway clearance equipment
- 2.9. you modify therapy based on patient response
- 2.10. you troubleshoot airway clearance equipment

#### Learning Objectives

- 2.a. Describe normal airway clearance and the factors that can impair their function.
- 2.b. Identify pulmonary diseases associated with abnormal airway clearance.
- 2.c. Describe specialized cough techniques such as directed cough, huff cough, forced expiratory technique, splinted cough, and autogenic drainage.
- 2.d. State the goals, indications, contraindications, hazards and precautions for all bronchial hygiene therapies.
- 2.e. Perform bronchial hygiene including postural drainage, percussion and vibration (PDPV).

- 2.f. Describe the proper technique and potential benefits of positive expiratory pressure (PEP) and vibratory PEP.
- 2.g. Differentiate mechanical devices used for secretion removal such as a mechanical in/exsufflator and high frequency chest wall compression/oscillation.
- 2.h. Monitor a patient's response to bronchial hygiene therapy.
- 2.i. Modify bronchial hygiene therapy based on a patient's response.

### **3. Perform volume expansion therapies (i.e. IPPB, IS, CPAP, PEP)**

#### **Assessment Strategies**

- 3.1. given various patient scenarios
- 3.2. by answering questions in oral or written format
- 3.3. by performing techniques in a simulated patient setting

#### **Criteria**

*Your performance will be successful when:*

- 3.1. you perform all relevant steps on the procedure checklist
- 3.2. assessment includes review of patient data and recommendation of additional data if needed
- 3.3. assessment supports volume expansion technique selected
- 3.4. assessment includes appropriate outcome assessment for technique selected
- 3.5. assessment follows available clinical practice guidelines
- 3.6. you modify therapy based on patient response
- 3.7. you select volume expansion equipment
- 3.8. you assemble volume expansion equipment
- 3.9. you use volume expansion equipment
- 3.10. you troubleshoot volume expansion equipment

#### **Learning Objectives**

- 3.a. Describe clinical findings associated with various types of atelectasis.
- 3.b. Identify patients in need of volume expansion therapy.
- 3.c. Describe how lung expansion therapy works and compare various techniques.
- 3.d. List the indications, hazards, and complications associated with the various modes of lung expansion therapy.
- 3.e. Develop a respiratory care plan using evidence based protocols.
- 3.f. Monitor a patient's response to therapy and modify the treatment plan as indicated.

### **4. Develop an educational plan for patient and family**

#### **Assessment Strategies**

- 4.1. given various patient scenarios
- 4.2. by answering questions in oral or written format

#### **Criteria**

- 4.1. educational plan is age appropriate
- 4.2. educational plan includes but not limited to therapy goals, breathing training, pharmacy, oxygen, secretion management, equipment, disease, smoking cessation, nutrition as appropriate
- 4.3. educational plan reflects cultural, ADA, gender, age, literacy and socioeconomic status
- 4.4. you implement the plan with a simulated patient

#### **Learning Objectives**

- 4.a. Assess the needs, abilities, and readiness to learn when providing patient education.
- 4.b. Identify barriers to patient learning and suggest ways to address them.
- 4.c. Evaluate patient learning using techniques such as teach back, return demonstration, and/or observation of behavior change.

### **5. Develop a multidisciplinary pulmonary rehabilitation care plan**

#### **Assessment Strategies**

- 5.1. given various patient scenarios
- 5.2. by answering questions in oral or written format
- 5.3. by implementation in a simulated patient setting

#### **Criteria**

*Your performance will be successful when:*

- 5.1. you educate patient and caregivers to achieve therapeutic outcomes in a pulmonary rehabilitation settings
- 5.2. care plan to include but not limited to therapy goals, breathing training, pharmacy, oxygen, secretion management, equipment, disease, smoking cessation, nutrition
- 5.3. care plan specifies the roles of various disciplines
- 5.4. care plan includes outcomes assessments
- 5.5. care plan incorporates appropriate educational plan
- 5.6. care plan is based on appropriate assessments
- 5.7. care plan is in appropriate protocols
- 5.8. you develop an exercise program according to the exercise prescription
- 5.9. you differentiate between cardiac and pulmonary rehabilitation protocols

#### **Learning Objectives**

- 5.a. Describe the purpose, program components, and goals of pulmonary rehabilitation.
- 5.b. Explain the role of the respiratory therapist in a pulmonary rehabilitation setting
- 5.c. Identify patients appropriate for inclusion in a pulmonary rehab program.

### **6. Adapt therapeutic interventions for delivery in an alternate care setting**

#### **Assessment Strategies**

- 6.1. given various patient scenarios
- 6.2. by answering questions in oral or written format
- 6.3. by implementation in a simulated patient setting

#### **Criteria**

*Your performance will be successful when:*

- 6.1. you educate patient and caregivers to achieve therapeutic outcomes in an alternate care setting
- 6.2. you select appropriate equipment for alternate care settings
- 6.3. you troubleshoot appropriate equipment for alternate care settings
- 6.4. you assemble and use appropriate equipment for alternate care settings
- 6.5. you modify therapies for use in an alternate care settings
- 6.6. you modify infection control techniques for use in alternate care settings
- 6.7. you identify safety concerns for equipment and therapies in alternate care settings

#### **Learning Objectives**

- 6.a. List the objective criteria required for medicare reimbursement of oxygen delivery in the home care setting.
- 6.b. Describe the operating principle of stationary and portable oxygen concentrators.
- 6.c. Compare delivery of respiratory care services in the acute care setting to alternative settings.

### **7. Perform 12 lead ECG**

#### **Assessment Strategies**

- 7.1. through a skill demonstration
- 7.2. with a role-play partner, peer
- 7.3. without the use of references

#### **Criteria**

*Your performance will be successful when:*

- 7.1. you select the correct instruments/equipment
- 7.2. you perform all critical steps in the right order
- 7.3. you follow safety procedures
- 7.4. you verbalize an explanation of the process as you perform it
- 7.5. your explanation presents sound reasoning as you describe the decisions you make throughout the process

#### **Learning Objectives**

- 7.a. List the indications for obtaining a 12 lead EKG.
- 7.b. Apply electrodes to the patient chest in the correct location.
- 7.c. Describe normal blood flow in the coronary arteries.

7.d. Differentiate ischemia and infarction.

## **8. Investigate evidence based medicine and respiratory care protocols**

### **Assessment Strategies**

8.1. Oral, Written and/or Skill Assessment

### **Criteria**

8.1. you describe the purpose for care protocols

8.2. you explain the correlation between evidence based medicine and respiratory care protocols

8.3. you apply protocols to patient cases