



Western Technical College

10515172 Respiratory Therapeutics 2

Course Outcome Summary

Course Information

Description	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.
Career Cluster	Health Science
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	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