



Western Technical College

10515180 Respiratory Neo/Peds Care

Course Outcome Summary

Course Information

Description	Provides a comprehensive orientation to the field of neonatal and pediatric respiratory care to include fetal development, birth, neonatal physiology, pulmonary dynamics, abnormal cardiopulmonary conditions, diseases, noninvasive and invasive therapeutic interventions. 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	2
Total Hours	36

Pre/Corequisites

Pre/Corequisite 10515113 Respiratory Life Support

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**: 978-0-323-51112-4. Required.

Comprehensive Respiratory Therapist's Exam Review – w/ Access. 7th Edition. Copyright 2020. Sills, James R. Publisher: Elsevier Science. **ISBN-13**: 978-0-323-55367-4. Required.

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. Summarize cardiopulmonary development (conception through maturity)

Assessment Strategies

- 1.1. by answering questions about the concepts that support this competency (format may be oral, written, or graphic)

Criteria

Your performance will be successful when:

- 1.1. you draw and label the anatomy of fetal circulation.
- 1.2. you relate stages of fetal development to extra-uterine morbidity and mortality
- 1.3. you relate stages of development to the development of major organ systems
- 1.4. you interpret fetal lung maturity indicators

Learning Objectives

- 1.a. fetal circulation
- 1.b. Diagram fetal circulation
- 1.c. Explain the importance of surface tension and surface active agents
- 1.d. Correlate surfactant production to fetal health
- 1.e. Describe fetal lung fluid components
- 1.f. Explain the development of the cardiopulmonary system
- 1.g. Describe the development of the placenta and the umbilicus
- 1.h. Identify amniotic fluid volumes

2. Differentiate cardiopulmonary diseases/disorders of the neonatal/pediatric patient

Assessment Strategies

- 2.1. by preparing a written response to a case study
- 2.2. by answering questions about the concepts that support this competency (format may be oral, written, or graphic)

Criteria

Your performance will be successful when:

- 2.1. you identify the signs and symptoms, etiology, pathogenesis, and treatment of neonatal cardiopulmonary disorders such as IRDS, meconium aspiration, congenital cardiopulmonary anomalies
- 2.2. you identify the signs and symptoms, etiology, pathogenesis, and treatment of pediatric cardiopulmonary disorders such as epiglottitis, croup, asthma, bronchiolitis/RSV, cystic fibrosis

Learning Objectives

- 2.a. Identify the signs and symptoms, etiology, pathogenesis, and treatment of neonatal cardiopulmonary disorders
- 2.b. Differentiate treatment based on the signs and symptoms, etiology, pathogenesis, of neonatal cardiopulmonary disorders
- 2.c. Identify the signs and symptoms, etiology, pathogenesis, and treatment of neonatal cardiopulmonary disorders
- 2.d. Develop a care plan for the neonatal/pediatric respiratory care patient
- 2.e. Differentiate treatment based on the signs and symptoms, etiology, pathogenesis, of neonatal cardiopulmonary disorders

3. Develop a therapeutic care plan for the neonatal/pediatric patient

Assessment Strategies

- 3.1. through the development of a care plan given a case study or scenario

Criteria

Your performance will be successful when:

- 3.1. care plan includes interpretation of assessment
- 3.2. care plan includes modification of therapies to the neonatal/pediatric patient such as bronchial hygiene, oxygen, humidity and aerosol therapy
- 3.3. care plan includes recommendation of further therapeutic interventions such as CPAP, surfactant, NO, ECMO
- 3.4. care plan includes calculation of drug dosages

Learning Objectives

- 3.a. Recommend therapy based on the patient's disease state for the respiratory care plan
- 3.b. Perform an assessment of a neonatal/pediatric patient
- 3.c. Recommend therapeutic interventions both NPPV and Mechanical ventilation
- 3.d. Develop a care plan for a neonatal/pediatric patient

4. Evaluate cardiopulmonary status of the neonatal/pediatric patient

Assessment Strategies

- 4.1. by developing an analysis (format may be written or oral)
- 4.2. by answering questions about the concepts that support this competency (format may be oral, written, or graphic)
- 4.3. by preparing a written response to a case study

Criteria

Your performance will be successful when:

- 4.1. you calculate an APGAR score
- 4.2. you interpret an APGAR score, gestational age, etc.
- 4.3. you interpret cardiopulmonary assessment
- 4.4. you evaluate the transillumination of the neonatal patient
- 4.5. you evaluate non-invasive monitoring of oxygenation and ventilation
- 4.6. you evaluate invasive monitoring such as capillary blood gases, UAC, ABG, VBG

Learning Objectives

- 4.a. Evaluate a patient utilizing an APGAR
- 4.b. Explain the importance of the Dubowitz and Ballard assessments
- 4.c. Describe the physical signs used to determine gestational age
- 4.d. List the goals for an examination of the pediatric pulmonary system
- 4.e. Correlate diagnostic tools for evaluation of the cardiopulmonary system of the neonate
- 4.f. Perform non-invasive monitoring of the neonate
- 4.g. Explain the role of capillary gases in the neonatal patient monitoring

5. Evaluate radiologic images of the chest

Assessment Strategies

- 5.1. by answering questions about the concepts that support this competency (format may be oral, written, or graphic)
- 5.2. by labeling radiologic images of the neonatal/pediatric patient
- 5.3. by developing an analysis (format written, oral) of neonatal/pediatric radiologic images.

Criteria

Your performance will be successful when:

- 5.1. you identify anatomical structures on the neonatal/pediatric radiologic image.
- 5.2. you identify normal and abnormal characteristics of neonatal/pediatric radiologic images.
- 5.3. you correlate the neonatal/pediatric radiologic image to a clinical pathology.

6. Apply principles of mechanical ventilation and airway management for the neonatal/pediatric patient

Assessment Strategies

- 6.1. by identifying management of neonatal/pediatric mechanical ventilation (format may be written, oral)
- 6.2. by selecting appropriate airway and adjuncts for neonatal/pediatric airway application
- 6.3. by answering questions about the concepts that support this competency (format may be oral, written, or graphic)

Criteria

Your performance will be successful when:

- 6.1. you identify techniques to improve oxygenation and ventilation
- 6.2. you identify the clinical application of ventilatory support in the neonatal/pediatric patient
- 6.3. you compare and contrast adult, pediatric, and neonatal ventilatory modalities such as HFO and jet ventilator

- 6.4. you identify weaning criteria of mechanical ventilation of the neonatal/pediatric patient
- 6.5. you recommend discontinuance of mechanical ventilation of the neonatal/pediatric patient
- 6.6. you select appropriate airways or adjuncts for clinical scenarios such as suction and speaking valves
- 6.7. you apply principles of CPAP therapy for the neonatal/pediatric patient such as initiation, discontinuance, weaning parameters based on patient data
- 6.8. you recognize modes of operation and monitoring
- 6.9. you apply advanced life support technologies to neonatal/pediatric patients

Learning Objectives

- 6.a. Describe the goals of mechanical ventilation
- 6.b. Define terms common to the management of a mechanically ventilated patient
- 6.c. Calculate I time, I:E, and pulmonary mechanics measurement of a ventilated neonatal/pediatric patient
- 6.d. Contrast the compliance of the respiratory system with that of the adult patient
- 6.e. Explain ventilator management for the neonatal/pediatric patient
- 6.f. Describe the role of INO, HFOV in the care of the neonatal/pediatric patient
- 6.g. Evaluate weaning strategies in neonatal/pediatric population
- 6.h. Discuss airway management in neonatal/pediatrics

7. Perform resuscitation based on NRP and PALS

Assessment Strategies

- 7.1. by responding to situations and scenarios (format may be oral, written or graphic)

Criteria

- 7.1. you follow the guidelines established in PALS and NRP

Learning Objectives

- 7.a. Perform neonatal resuscitation
- 7.b. Describe method of pediatric resuscitation