RSPC A290: NEONATAL INTENSIVE CARE

Item	Value
Curriculum Committee Approval Date	11/04/2020
Top Code	121000 - Respiratory Care/Therapy
Units	2 Total Units
Hours	56 Total Hours (Lecture Hours 28; Lab Hours 28)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Theory and practice of neonatal intensive respiratory care with emphasis on the role of the R.C.P. Includes fetal anatomy and physiology, delivery and assessment, resuscitation, neonatal pathologies, respiratory care diagnostic and therapeutic procedures, and techniques for mechanical ventilation. Provider approved C.B.R.N, CEP #12655 for 56 hours. PREREQUISITE: RSPC A270 and RSPC A275. COREQUISITE: RSPC A286. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Describe and apply knowledge of neonatal development, assessment, life support modalities and pathologies.

Course Objectives

- 1. Analyze placental anatomy, physiology, and development.
- 2. Describe the procedures that are performed after a normal and high risk birth.
- 3. Describe and perform resuscitation procedures for the neonate.
- 4. Describe normal thermal regulation and recognize how it is impeded.
- 5. Interpret clinical and lab data including ABGs
- 6. Utilize monitoring devices.
- 7. Recognize various neonatal pathologies including definition, etiology, signs and symptoms, lab and x-ray findings, treatments, and prognosis.
- 8. Initiate and maintain patient airways utilizing various techniques and equipment.
- 9. Assess patient data from lab, x-ray, and chest examination to make appropriate recommendations to patient care.
- 10. Assess oxygenation and recommend appropriate therapy.
- 11. Apply knowledge of specialty therapeutic treatments and modalities to manage neonate population given patient diagnosis and pathologies.
- 12. Apply mechanical ventilation techniques to given patient situations.
- 13. Identify high risk situations and describe transport of patient by land or air between facilities.

Lecture Content

Fetal-placental anatomy and physiology Placental anatomy and physiology Fetal development and fetal circulation Evaluating fetal maturity and fetal monitoring during labor Neonatal transition and assessment Normal labor and delivery Abnormal labor and delivery Transition from fetus to neonate Apgar scoring Silver-Anderson scoring Dubowitz physical and neurological exam Gestational age and intrauterine growth SGA, AGA, and LGA Neonatal resuscitation After delivery Meconium babies Airway and breathing--equipment and techniques Infant CPR Neonatal ALS drugs Intubation--techniques and equipment Airway suctioning--equipment and techniques Neonatal anatomy and physiology Compared to adult Mechanics of infant breathing Time constants Neonatal breathing patterns Neonatal pathologies A. Congenital defects B. Cardiacs p; C. Pulmonary VI. Thermal regulation Neutral thermal environment Mechanisms of heat transfer Effects of cold stress Isolettes and radiant warmers VII. Neonatal blood gases Normal values for ABGs Capillary gases Sample sites and sampling techniques VIII. Therapeutic Treatments and Modalities A. Oxygen 1. High flow nasal cannula 2. Non-invasive CPAP 3. Bubble CPAP B. Gas mixtures 1. Heliox 2. Carbogen 3. Inhaled NO C. ECMO IX. Mechanical Ventilation A. Initiation, Management, and Weaning 1. Conventional 2. Oscillator X. High Risk Situations A. Transport to higher level of care

Lab Content

I. Fetal development and circulation II. Neonatal resuscitation III. Intubation technique and equipment IV. Therapeutic treatments and modalities V. Mechanical ventilation VI. High risk situations and transport

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture discussion, lab demonstration and instructor feedback, small group exercises, patient case studies, computer and manikin simulations.

Reading Assignments

Student will spend 3-4 hours weekly reading 2-4 textbook chapters, patient case-study assignments and researching Pathology project.

Writing Assignments

Student will spend 3-4 hours weekly completing homework and patient case study assignments, pathology project and examinations.

Out-of-class Assignments

Student will spend 3-4 hours weekly completing reading assignments, related homework and patient case-study assignments and Pathology project.

Demonstration of Critical Thinking

Student performance, completion of lab skills, written assignments, and written examinations

Required Writing, Problem Solving, Skills Demonstration

Pathology project, homework and patient case-study assignments, and written examinations.

Eligible Disciplines

Respiratory technician: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Walsh, Brian. Neonatal and Pediatric Respiratory Care, 5e ed. Elsevier, 2020 2. Required American Academy of Pediatrics. Textbook of Neonatal Resusciation, 7th ed. American Heart Association, 2016 Legacy Textbook Transfer Data: This is the most recent edition