

Essentials of Neonatal Critical Care Orientation 5.0

Course Syllabus

Module & Lesson	Objectives	CNE Contact Hours – <i>Exp. Date: 11/30/2028</i>
<p>Module 1 – Patient Care Lesson 1: Extruterine Life: Fetal to Neonatal Circulation</p>	<ul style="list-style-type: none"> • Recognize key stages in the normal development of the cardiovascular system in the fetus. • Recall primary features of normal fetal circulation including anatomical structures/shunts and blood flow. • Identify changes to blood flow pathways and anatomical structures during the neonate’s transition to extruterine life. 	0.5 Hours
<p>Module 1 – Patient Care Lesson 2: Extruterine Life: Assessment of the Neonate’s Transition</p>	<ul style="list-style-type: none"> • Recognize normal assessment characteristics, including cardiopulmonary changes, of the neonate in transition to extruterine life. • Identify the signs that indicate the neonate is having difficulty transitioning to extruterine life. • Summarize the characteristics of the high-risk or at-risk infant. • Explain the benefits of the Golden Hour and its impact on neonatal transition. 	0.75 Hours
<p>Module 1 – Patient Care Lesson 3: Comprehensive Assessment of the Neonate</p>	<ul style="list-style-type: none"> • Describe the components of a maternal/family/prenatal history. • Classify a newborn by gestational age and weight. 	1.0 Hours

	<ul style="list-style-type: none"> • Identify neonatal risk factors based on intrauterine growth patterns and the gestational age assessment. • List the steps to perform a neonatal head-to-toe physical assessment, utilizing four techniques of physical assessment. • Discuss normal versus abnormal findings of a neonatal physical exam. 	
<p>Module 1 – Patient Care <u>Lesson 4:</u> Developmental Care of the Newborn</p>	<ul style="list-style-type: none"> • Describe developmental differences in behaviors of the newborn based on gestational age. • Recall and describe the subsystems of the newborn's central nervous system (CNS) development. • Identify indicators of infant stress and stability for each subsystem. • Discuss interventions to reduce stress and promote stable behaviors. 	0.5 Hours
<p>Module 1 – Patient Care <u>Lesson 5:</u> Family-Centered Care in the NICU</p>	<ul style="list-style-type: none"> • Define family-centered care and explain the core principles. • Discuss the major sources of stress for families of critically ill infants. • Discuss the role of social workers in supporting families in the NICU. • Describe evidence-based interventions to support families in crisis. • Identify appropriate Safe to Sleep® behaviors to educate families. 	0.75 Hours

	<ul style="list-style-type: none"> • Select appropriate strategies to facilitate a positive sibling visit. 	
<p>Module 1 – Patient Care <u>Lesson 6:</u> Maternal Factors Affecting the Newborn</p>	<ul style="list-style-type: none"> • Recognize risks to the infant related to select maternal pre-existing and gestational conditions as well as identified labor complications. • Describe the effects at-risk maternal behaviors may have on the newborn. • Identify interventions to reduce infant risk related to select maternal conditions and at-risk behaviors. • Detect neonatal signs of complications due to identified maternal conditions or labor complications. 	0.75 Hours
<p>Module 1 – Patient Care <u>Lesson 7:</u> Intrauterine Substance Exposure</p>	<ul style="list-style-type: none"> • Discuss the incidence of substance abuse during pregnancy. • Differentiate between neonatal abstinence syndrome (NAS) and neonatal opioid withdrawal syndrome (NOWS) and describe the effect of substance use on the developing fetus and newborn. • Outline the clinical presentation of infants affected by intrauterine substance exposure. • Explain two assessment tools used to screen for, diagnose and quantify severity of signs and symptoms of intrauterine substance exposure. • Outline non-pharmacologic and pharmacologic interventions, including family engagement strategies, for managing the infant with intrauterine substance exposure. • Give examples of potential complications and long-term outcomes of infants with intrauterine substance exposure. 	0.75 Hours

<p>Module 1 – Patient Care <u>Lesson 8</u>: Neonatal Nutrition Overview</p>	<ul style="list-style-type: none"> • Identify the goals of nutritional support for the premature or high-risk infant. • Distinguish newborn classifications by gestational age and outline components of nutrition screening and assessment. • Analyze nutritional requirements, challenges and associated comorbidities for premature and high-risk infants with congenital anomalies or medical conditions. 	<p>0.5 Hours</p>
<p>Module 1 – Patient Care <u>Lesson 9</u>: Modalities of Neonatal Nutrition</p>	<ul style="list-style-type: none"> • Compare modalities of nutritional support utilizing both parenteral and enteral nutrition. • Analyze evidence-based recommendations and benefits for the use of human milk and/or breastfeeding in premature and high-risk infants. • Explain components of infant-driven oral feeding readiness assessment and feeding progression. • Discuss the process of discharge planning from the NICU to home for the high-risk infant. 	<p>0.75 Hours</p>
<p>Module 1 – Patient Care <u>Lesson 10</u>: Neonatal Pain Assessment and Management</p>	<ul style="list-style-type: none"> • Describe neonatal and infant behavioral and physiological responses to pain. • Explain considerations for selecting a pain assessment tool for use with neonates and infants. • Outline non-pharmacologic pain management interventions and pharmacologic pain management for the neonate and infant. • Identify interventions for managing procedural pain in the neonate and infant. 	<p>0.75 Hours</p>

<p>Module 1 – Patient Care <u>Lesson 11: Neonatal Pharmacokinetics</u></p>	<ul style="list-style-type: none"> • Define key terminology and concepts related to fetal and neonatal development. • Explain developmental differences that influence pharmacokinetics parameters in neonates. • Apply pharmacokinetic principles (absorption, distribution, metabolism, excretion) to specific medications used in the neonatal population. 	<p>0.75 Hours</p>
<p>Module 1 – Patient Care <u>Lesson 12: Neonatal Skin Care</u></p>	<ul style="list-style-type: none"> • Describe the unique characteristics of skin maturation of premature and term infants. • Identify the goals and interventions of neonatal skin care. • Explain the differences and proper usage of barriers and adhesives used in neonatal skin care. • Outline the evidence-based practice guidelines for management of diaper dermatitis and IV infiltrates. 	<p>0.75 Hours</p>
<p>Module 1 – Patient Care <u>Lesson 13: Thermoregulation of the Newborn Infant</u></p>	<ul style="list-style-type: none"> • Summarize the physiology of temperature regulation in the newborn. • Differentiate the mechanisms of heat transfer and interventions to prevent heat loss. • Compare and contrast risk factors related to cold stress and potential management strategies. • Identify the signs of cold stress and hyperthermia. • Describe appropriate interventions to provide a neutral thermal environment for the newborn infant. 	<p>0.75 Hours</p>

<p>Module 2 - Respiratory Care <u>Lesson 1:</u> Apnea of Prematurity</p>	<ul style="list-style-type: none"> • Define apnea of prematurity (AOP) and differentiate from periodic breathing. • Describe the three types of apnea. • Identify common contributing factors to AOP. • Outline current standards of practice for managing AOP. 	<p>0.75 Hours</p>
<p>Module 2 - Respiratory Care <u>Lesson 2:</u> Bronchopulmonary Dysplasia</p>	<ul style="list-style-type: none"> • Explain the pathophysiology including the pathways of injury and related risk factors for development of bronchopulmonary dysplasia (BPD). • Discuss interventions to reduce the risk of BPD. • Describe the clinical presentation and related diagnosis of BPD. • Outline the current treatment modalities for an infant with BPD. • Summarize the related outcomes and potential complications of BPD. 	<p>0.75 Hours</p>
<p>Module 2 - Respiratory Care <u>Lesson 3:</u> Meconium Aspiration Syndrome</p>	<ul style="list-style-type: none"> • Explain the pathophysiology of meconium aspiration syndrome (MAS), including the mechanical and chemical mechanisms that occur. • Identify maternal and infant risk factors for the development of MAS. • Describe the clinical presentation including diagnostic radiographic findings of MAS. • Outline current interventions used in the prevention and management of MAS. 	<p>0.75 Hours</p>

<p>Module 2 - Respiratory Care <u>Lesson 4:</u> Pneumothorax in the Neonate</p>	<ul style="list-style-type: none"> • Recognize the conditions that place an infant at risk for pneumothorax. • Explain the pathophysiology of a pneumothorax in the neonate. • Recognize clinical presentation of a pneumothorax in the neonate. • Outline current standards of practice for interventions and management of a pneumothorax in the neonate. 	<p>0.5 Hours</p>
<p>Module 2 - Respiratory Care <u>Lesson 5:</u> Neonatal Respiratory Distress Syndrome</p>	<ul style="list-style-type: none"> • Describe the pathophysiology of respiratory distress syndrome (RDS). • Recognize the clinical presentation of RDS. • Outline current treatment and management strategies for RDS. 	<p>0.75 Hours</p>
<p>Module 2 - Respiratory Care <u>Lesson 6:</u> Transient Tachypnea of the Newborn</p>	<ul style="list-style-type: none"> • Explain the pathophysiology of transient tachypnea of the newborn (TTN). • Recognize factors placing infants at risk for TTN. • Recognize TTN using standard clinical indicators. • Outline current standards of practice for managing TTN. 	<p>0.5 Hours</p>
<p>Module 3 – Neonatal Vascular Access <u>Lesson 1:</u> Central Lines in the Neonate</p>	<ul style="list-style-type: none"> • Explain why central venous catheters (CVCs) are necessary for patients in the NICU. • Identify types of CVCs used in the neonatal population. • Apply the steps of the insertion and maintenance bundles. • Recognize complications associated with CVCs. 	<p>1.0 Hours</p>

	<ul style="list-style-type: none"> • Follow evidence-based measures to prevent and manage central line-associated complications. • Identify strategies to safely support neurodevelopmental care practices in neonates with central venous catheters. 	
<p>Module 4 – Metabolic Function and Disorders <u>Lesson 1: Glucose Homeostasis in the Neonate</u></p>	<ul style="list-style-type: none"> • Explain the mechanisms of glucose homeostasis in the fetus and neonate. • Identify risk factors for neonatal hypoglycemia and hyperglycemia. • Recognize clinical signs of glucose instability in term and preterm infants. • Apply current screening, monitoring, and treatment guidelines for managing neonatal hypoglycemia and hyperglycemia. • Describe potential short- and long-term outcomes associated with glucose dysregulation in newborns. 	0.75 Hours
<p>Module 4 – Metabolic Function and Disorders <u>Lesson 2: Hyperbilirubinemia</u></p>	<ul style="list-style-type: none"> • Explain physiologic and clinical risk factors contributing to newborn hyperbilirubinemia. • Discuss the links between hyperbilirubinemia and breastfeeding. • Compare and contrast physiologic and pathologic hyperbilirubinemia. • Identify diagnostic testing for hyperbilirubinemia and summarize two primary treatment methods, including their complications. • Differentiate acute bilirubin encephalopathy and bilirubin-induced neurological dysfunction. 	0.75 Hours

<p>Module 4 – Metabolic Function and Disorders <u>Lesson 3</u>: Metabolic Disorders of the Newborn</p>	<ul style="list-style-type: none"> • Describe the five categories of metabolic disorders identified in the neonatal period, including the initial presentation. • Discuss the role of newborn screening for early identification of metabolic disorders. • Recall the presentation of metabolic disorders in the newborn including findings from the infant and family history, physical assessment, any abnormal odors and laboratory results. • Identify specific treatment and management strategies for metabolic disorders. • Explain the necessity of providing caregiver support and counseling after a positive finding on a newborn screen or diagnosis of a metabolic disorder. 	<p>0.75 Hours</p>
<p>Module 5 - Infectious Diseases and Management <u>Lesson 1</u>: Neonatal Sepsis</p>	<ul style="list-style-type: none"> • Identify risk factors that make the newborn infant more susceptible to infection. • Distinguish between early- and late-onset sepsis in the neonate. • Recognize the clinical presentation of sepsis in the neonate, including changes in physical exam and vital signs along with common pathogens, infection sites and laboratory and diagnostic findings. • Describe the current standards of care and treatment in the management of neonatal sepsis, including antimicrobial stewardship. 	<p>1.0 Hours</p>
<p>Module 6 - Neurology <u>Lesson 1</u>: Neonatal Cranial Hemorrhage</p>	<ul style="list-style-type: none"> • Outline vascular, extravascular and intravascular factors associated with the development of intraventricular hemorrhage (IVH). 	<p>0.75 Hours</p>

	<ul style="list-style-type: none"> • Discuss the presentation, diagnosis, and criteria associated with grading IVH. • Outline interventions and care strategies for the preterm infant with IVH. • Describe the presentation, prognosis and strategies for prevention of white matter injury, including periventricular leukomalacia (PVL). • Recognize the cranial hemorrhages associated with the term infant and diagnostic methods available to identify a hemorrhage. 	
<p>Module 6 - Neurology <u>Lesson 2: Neonatal Seizures</u></p>	<ul style="list-style-type: none"> • Explain the underlying etiologies for neonatal seizures. • Recognize abnormal newborn movements associated with seizures. • Differentiate the various seizure characteristics that might be observed in neonates. • Describe diagnostic tools used in the assessment of a newborn with suspected or confirmed seizures. • Evaluate the goals of clinical management for a neonate with suspected seizures. 	<p>1.0 Hours</p>
<p>TOTAL: 6 Modules, 26 Lessons</p>		<p>TOTAL CNE HOURS: 19.25</p>