



Edward Via College of
Osteopathic Medicine
VIRGINIA • CAROLINAS
AUBURN

Edward Via College of Osteopathic Medicine

4th Year Clinical Rotation: Neonatal Intensive Care Unit
(NICU) MED 8200: Medical Selective Clinical Rotation I

COURSE SYLLABUS

Chairs	Contact Information
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I. Rotation Description

Students will develop understanding and knowledge in the recognition and management of medical, surgical, and other problems associated with preterm and term neonates.

II. Rotation Goals

- a. Perform directed, pertinent history and physical examination with age appropriate differential diagnosis
- b. Identify indications and criteria for admission to and discharge from the NICU
- c. Identify common causes of acute deterioration in previously stable preterm neonates
- d. Demonstrate ability to resuscitate, stabilize and prepare the distressed neonate for transfer to neonatal intensive care.
- e. Specific required skills include:
 1. Perform age-appropriate birth history and physical examination, including APGAR scores, birth history, maternal medical history
 2. Observe/assist in resuscitation of term and preterm neonates
 - i. Observe/assist in resuscitation of a meconium delivery.
 - ii. Observe/assist in maintaining open airway through bag-mask or tracheal intubation
 - iii. Observe/assist in cardioversion
 - iv. Observe/assist in establishing vascular access (IV, UAC, UVC, Central line)
 - v. Perform or assist lumbar puncture and interpretation of results
 - vi. Calculate maintenance and replacement fluid and electrolyte requirements
 - vii. Calculate and formulate the ingredients of TPN based on nutritional and electrolyte status
 - viii. Observe/assist in pleurocentesis and chest tube placement

III. Rotation Design

The Pediatric Neonatal Intensive Care Unit rotation occurs in pediatric hospitals involved in the inpatient care of term and preterm neonates.

IV. Credits

4 week course = 4 credit hours

V. Suggested Textbook and References

Marcdante KJ. Nelson Essentials of Pediatrics. 6th Ed (2011), Chapters 58-66, pp 213-263

Tschudy MM, Arcara KM. The Johns Hopkins Hospital. The Harriet Lane Handbook. Mosby Elsevier, 19th Ed (2011). Chapter 18, pp 455-475

Kliegman RM. Nelson Textbook of Pediatrics. 19th Ed (2011), Chapters 87-103, pp 532-648

VI. Course Grading/Requirements for Successful Completion of the Neonatal Critical Care Medicine Rotation

- a. Attendance according to VCOM and preceptor requirements
- b. Preceptor Evaluation at end-of-rotation

Grading policies, academic progress, and graduation requirements may be found in the *College Catalog and Student Handbook* at: <http://www.vcom.vt.edu/catalog/>.

VII. Clinical Performance Objectives

The end-of-rotation evaluation for this rotation will be completed by your preceptor and is based on clinical core competencies. These core competencies reflect student performance in 6 key areas: communication, problem solving, clinical skills, medical knowledge, osteopathic medicine and professional and ethical considerations. Your end-of-rotation evaluation from your preceptor will be based directly on your performance in these 6 core competencies as described below.

- a. Communication - the student should demonstrate the following clinical communication skills:
 1. Effective listening to patient, family, peers, and healthcare team
 2. Demonstrates compassion and respect in patient communications
 3. Effective investigation of chief complaint, medical and psychosocial history specific to the rotation
 4. Considers whole patient: social, spiritual & cultural concerns
 5. Efficiently prioritizes essential from non-essential information
 6. Assures patient understands instructions, consents & medications
 7. Presents cases in an accurate, concise, well organized manner
- b. Problem Solving – the student should demonstrate the following problem solving skills:
 1. Identify important questions and separate data in organized fashion organizing positives & negatives
 2. Discern major from minor patient problems
 3. Formulate a differential while identifying the most common diagnoses
 4. Identify indications for & apply findings from the most common radiographic and diagnostic tests
 5. Identify correct management plan considering contraindications & interactions
- c. Clinical Skills - the student should demonstrate the following problem solving skills:
 1. Assesses vital signs & triage patient according to degree of illness
 2. Perform good auscultatory, palpatory & visual skills
 3. Perform a thorough physical exam pertinent to the rotation

- d. Osteopathic Manipulative Medicine - the student should demonstrate the following skills in regards to osteopathic manipulative medicine:
 1. Apply osteopathic manipulative medicine successfully when appropriate
 2. Perform and document a thorough musculoskeletal exam
 3. Utilize palpatory skills to accurately discern physical changes that occur with various clinical disorders
 4. Apply osteopathic manipulative treatments successfully

- e. Medical Knowledge – the student should demonstrate the following in regards to medical knowledge:
 1. Identify & correlate anatomy, pathology and pathophysiology related to most disease processes
 2. Demonstrate characteristics of a self-motivated learner including demonstrating interest and enthusiasm about patient cases and research of the literature
 3. Are thorough & knowledgeable in researching evidence based literature
 4. Actively seek feedback from preceptor on areas for improvement
 5. Correlate symptoms & signs with most common diseases

- f. Professional and Ethical Behaviors - the student should demonstrate the following professional and ethical behaviors and skills:
 1. Is dutiful, arrives on time & stays until all tasks are complete
 2. Consistently follows through on patient care responsibilities
 3. Accepts & readily responds to feedback, is not resistant to advice
 4. Assures professionalism in relationships with patients, staff, & peers
 5. Displays integrity & honesty in medical ability and documentation
 6. Acknowledges errors, seeks to correct errors appropriately
 7. Is well prepared for and seeks to provide high quality patient care
 8. Identifies the importance to care for underserved populations in a non-judgmental & altruistic manner

- g. Osteopathic Manipulative Medicine Components
 Students must be familiar with the OMM didactic and workshop requirements for their OMS-4 year as described in the Osteopathic Manipulative Medicine website.

VIII. Curriculum

- a. Describe the pathophysiology, differential diagnosis, diagnostic evaluation and management of the Neonatal patients with the following conditions:
 1. Pulmonary disorders:
 Respiratory distress syndrome, birth asphyxia, transient tachypnea, Hyaline Membrane disease, meconium aspiration, amniotic fluid aspiration, persistent pulmonary hypertension of the newborn, pneumonia, pneumothorax, bronchopulmonary dysplasia, atelectasis, apnea of prematurity

 2. Cardiovascular conditions:
 Congenital heart disease, cyanotic and acyanotic (including common disorders such as PDA, VSD, ASD, AV canal, TGA, etc. and less common but severe conditions such as hypoplastic left/right heart syndromes, severe ductal dependent lesions such as interrupted aortic arch, pulmonary atresia without VSD, total anomalous pulmonary venous return, etc.), various etiologies of congestive heart failure, and conduction abnormalities such as partial or complete heart block, SVT and other tachyarrhythmias, and bradyarrhythmias, shock

3. Endocrine disorders:
Infant of a diabetic mother (including severe hypoglycemia), hypothyroidism, hyperthyroidism; ambiguous genitalia.
4. GI/nutrition:
Feeding problems in high risk neonates or those with special needs (cleft lip/palate, other facial anomalies, etc.), breast feeding support for mothers and infants with special needs (high risk premature, maternal illness, multiple birth, etc.), hepatitis, gastroesophageal reflux, meconium plug/meconium ileus.
5. Hematologic conditions:
Hyperbilirubinemia, Erythroblastosis fetalis, and severe hemolytic diseases, hydrops fetalis, plethora, coagulopathies of the newborn, hemophilia
6. Infectious disease:
Intrauterine infections (TORCH), Group B Streptococcal infections, neonatal sepsis and meningitis, herpes simplex: infant of mother with HIV, hepatitis, or syphilis; nosocomial infections, central line infections
7. Neurologic disorders:
Seizures, ischemic hypoxic encephalopathy, intraventricular hemorrhage, drug withdrawal, central apnea, hydrocephalus, neural tube defects.
8. Surgical conditions:
Necrotizing enterocolitis, perforated viscus, intestinal obstruction such as malrotation, diaphragmatic hernia, esophageal or gut atresia, gastroschisis, omphalocele,
9. Genetic Disorders & Syndromes:
Common chromosomal anomalies (e.g. trisomy 13, 18, 21; Turner's Syndrome); syndromes and congenital malformations
10. Ophthalmology conditions:
Retinopathy of prematurity

- b. Demonstrate basic knowledge of nutritional requirements based on gestational age.
- c. Demonstrate adequate basic knowledge of care of neonatal emergencies
- d. To understand the multidisciplinary approach to neonates with genetic conditions such as Trisomies, Pierre Robin Sequence and other congenital anomalies.
- e. Understand most effective manner to seek consultation and which cases are most appropriate for consultation or independent management
- f. Demonstrate sensitivity and skill in dealing with the unique problems involved in the care of neonates with multiple morbidities, as well as dealing with death and dying in the NICU setting