

**Family Medicine Residency**  
**Neonatal Intensive Care Rotation**  
**Brandon Churchill, MD (Updated: June 2021)**

**Rotation Goal**

This rotation is conducted in a Level III Neonatal Intensive Care Unit. During this rotation, residents will actively participate in the evaluation and care of critically ill neonates. Residents become acquainted with neonatal assessment, pathophysiology, resuscitation, and intensive care. They will also specifically learn about transitional physiology of the newborn as it relates to general neonatal care in the setting of Family Medicine. Residents are primarily precepted by attending neonatologists and neonatal nurse practitioners. Resident will also gain exposure to pediatric specialties through LeBonheur ambulatory clinic.

At the conclusion of this rotation, the resident should:

1. Perform an initial assessment and evaluation of a newborn infant and acutely determine the need for resuscitation.
2. Demonstrate competence in neonatal resuscitation and related skills.
3. Be able to identify neonates needing attention beyond routine newborn care and screenings.
4. Be able to identify neonates needing attention beyond the scope of a Family Medicine Provider.

**Weekly Schedule**

NICU: Monday- Friday. Generally, will work mornings only as this is when the Neonatal Intensivists will be rounding. FPC clinics will be scheduled on some mornings during the rotation to fulfill family medicine continuity requirements.

Resident will also spend time with pediatric specialist at LeBonheur ambulatory clinic in Jackson, TN on various afternoons during this rotation.

**Residents will participate in Family Medicine call and observe work-hour requirements.**

**Required Monthly Meetings**

- Second Monday (usually)- Perinatology/Neonatology Meeting
- Last Friday (usually) – NICU Grand Rounds

**Supervision**

All activities on the NICU Rotation will be supervised by a member of the Department of Neonatology. The physician on the service will be readily available. Supervising physicians include Jose Go, MD and Scott Guthrie, MD.

**Rotation Objectives**

By the end of the Neonatal Intensive Care rotation, PGY II & III residents are expected to expand and cultivate skills and knowledge learned during previous training and to achieve the following objectives based on the six general competencies. The resident should exhibit an increasing level of responsibility and independency as he or she progresses throughout the year.

| Competency | Required Skill(s) | Teaching Method(s) | Formative Evaluation | Frequency of |
|------------|-------------------|--------------------|----------------------|--------------|
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|                   |   |   | Method(s)  | Evaluation                                     |
|-------------------|---|---|--|--|
| Patient Care      | <b>SPECIALTY SPECIFIC OBJECTIVES</b>  |   |  |  |
|                   | Perform an initial assessment and evaluation of a newborn infant and determine the need for resuscitation.  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                   | Demonstrate competence in neonatal resuscitation and related skills   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                   | Formulate assessments and plans for patients  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                   | Accompany the neonatal transport team when appropriate and time permits   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                   | Under direct supervision perform the following procedures relevant to the care of neonates in the intensive care unit:<br>1. Attended deliveries (minimum 3)<br>2. Bag-Mask Resuscitations (1)<br>3. PIV Insertions (3)<br>4. Arterial punctures (2)<br>5. Umbilical catheters (1)<br>6. Intubation attempts (1)<br>7. Lumbar punctures (1)<br>8. Transport (encouraged)<br>9. Tube thoracostomy (encouraged) | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                   | Perform evaluations of neonates including the calculation of APGAR scores   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                   | Evaluate laboratory test results and correlate them to disease pathophysiology  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
| Medical Knowledge | <b>SPECIALTY SPECIFIC OBJECTIVES</b>  |   |  |  |

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|  | <p>Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to the care of premature infants and former premature infants with chronic medical problems</p>  | <p>NICU Grand Rounds<br/>Daily Rounds<br/>Self Directed Learning</p> | <p>Direct Feedback<br/>Global Evaluation<br/>360 Degree Evaluation<br/>Case Discussion</p> | <p>Daily<br/>Monthly<br/>Monthly<br/>End of rotation</p> |
|  | <p>Develop and apply knowledge of the pathophysiology, recognize physical findings to patient care, and demonstrate appropriate management of common neonatal pathological conditions such as</p> <ol style="list-style-type: none"> <li>a. Meconium-stained amniotic fluid</li> <li>b. Perinatal asphyxia</li> <li>c. Respiratory distress</li> <li>d. Cyanosis</li> <li>e. Apnea</li> <li>f. Seizures</li> <li>g. Hypoglycemia</li> <li>h. Evaluations of possible sepsis</li> <li>i. Developmental dysplastic hip</li> <li>j. Birth-related injuries</li> <li>k. Anemia</li> <li>l. Rh and blood type incompatibility</li> <li>m. Polycythemia</li> <li>n. Jaundice</li> <li>o. Premature and post-date gestations</li> <li>p. Maternal infections (HIV, Hepatitis, etc.)</li> </ol> | <p>NICU Grand Rounds<br/>Daily Rounds<br/>Self Directed Learning</p> | <p>Direct Feedback<br/>Global Evaluation<br/>360 Degree Evaluation<br/>Case Discussion</p> | <p>Daily<br/>Monthly<br/>Monthly<br/>End of rotation</p> |
|  | <p>Develop knowledge and skills of neonatal resuscitation and participate in neonatal resuscitation and management including the following:</p> <ol style="list-style-type: none"> <li>a. Positioning and tactile stimulation;</li> <li>b. Thermal regulation;</li> <li>c. Airway management (suctioning, endotracheal intubation, gastric tube insertion);</li> <li>d. Ventilation with a bag valve mask device and/or anesthesia bag;</li> <li>e. Establish vascular access including UVC line placement; and</li> <li>f. External chest compressions.</li> </ol>   | <p>NICU Grand Rounds<br/>Daily Rounds<br/>Self Directed Learning</p> | <p>Direct Feedback<br/>Global Evaluation<br/>360 Degree Evaluation<br/>Case Discussion</p> | <p>Daily<br/>Monthly<br/>Monthly<br/>End of rotation</p> |
|  | <p>Develop the knowledge of the following relevant to the care of neonates:</p> <ol style="list-style-type: none"> <li>1. Stabilization of critically ill neonates</li> </ol>   | <p>NICU Grand Rounds<br/>Daily Rounds<br/>Self Directed Learning</p> | <p>Direct Feedback<br/>Global Evaluation<br/>360 Degree Evaluation</p>                     | <p>Daily<br/>Monthly<br/>Monthly</p>                     |

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|   | 2. Performance of procedures on neonates.<br>3. Neonatology ethics  |   | Case Discussion  | End of rotation                                |
|   | Demonstrate an understanding of the pathophysiology and physical findings associated with prematurity and learn the principles of detailed management of such conditions and the physiology and recognize physical findings of the normal perinatal transition. | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|   | Integrate the basic principles of precise fluid, electrolyte, and nutrition management into patient care  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|   | Analyze the pharmacologic agents (or categories thereof) used in the management of critically ill neonates  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|   | Summarize mechanical ventilation in the neonate and the various modes of ventilation used in the neonates   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|   | Observe complex neonatal care and learn the risk factors leading to such care and the appropriate convalescent management   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
| Practice Based Learning and Improvement | <b>SPECIALTY SPECIFIC OBJECTIVES</b>  |   |  |  |
|   | See General Family Medicine Objectives for a comprehensive list.  |   |  |  |
|   | Develop tools to help meet the needs of patients and families.  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|   | Recognize own level of competence in handling rheumatology problems and the need for further consultation as appropriate.   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|   | Facilitate learning of medical students, residents and other health care professionals to encourage quality improvement in patient care   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
| Interpersonal and                       | <b>SPECIALTY SPECIFIC OBJECTIVES</b>  |   |  |  |

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| Communication Skills   | See General Family Medicine Objectives for a comprehensive list.   |   |  |  |
|                        | Communicate effectively with families while in the presence of their daily preceptor.  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                        | Educate families about community resources and common disorders/diseases found in neonates   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                        | Provide families psychosocial support and counseling as indicated  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                        | Convey information in a clear and concise manner to patients, families, and other health professionals (i.e., use appropriate vocabulary choice, realistic outcomes, and working with difficult patients and family) | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
| Professionalism        | <b>SPECIALTY SPECIFIC OBJECTIVES</b>   |   |  |  |
|                        | See General Family Medicine Objectives for a comprehensive list.   |   |  |  |
|                        | Provide compassionate and high quality care to all patients regardless of gender, age, culture, race, religion, disabilities, sexual orientation or socioeconomic class  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                        | Behave in a professional manner when interacting with patients or other health care providers (i.e., integrity, respect, accountability, punctual)   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
| Systems-Based Practice | <b>SPECIALTY SPECIFIC OBJECTIVES</b>   |   |  |  |
|                        | See General Family Medicine Objectives for a comprehensive list.   |   |  |  |
|                        | Incorporate considerations of cost awareness and risk-benefit analysis in patient care   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|                        | Advocate for quality patient care and optimal patient care systems   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |

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|  | Describe the role of various ancillary modalities of patient care that are available including physical therapy, occupational therapy, respiratory therapy, nutrition services and social services | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|  | Develop an understanding of coding and billing relevant to neonatal intensive care.  | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |
|  | Utilize community resources that are available to assist physicians in their care of neonates.   | NICU Grand Rounds<br>Daily Rounds<br>Self Directed Learning | Direct Feedback<br>Global Evaluation<br>360 Degree Evaluation<br>Case Discussion | Daily<br>Monthly<br>Monthly<br>End of rotation |

### **Educational Resources**

You will be responsible for obtaining the following books from faculty or UTHSC online library and reviewing them as stated.

1. Neonatal Resuscitation Textbook- Review this entire text
2. Manual of Neonatal Care- Read the chapters below as well as any chapters pertaining to your patients
  - Chap. 2- Maternal Conditions that Affect the Fetus
  - Chap. 3- Assessment of the Newborn
  - Chap. 4- Resuscitation in the Delivery Room
  - Chap. 5- Nursery Care of the Well Newborn
  - Chap. 15- Follow-up of Very-Low-Birth-Weight Infants
  - Chap 18- Neonatal Hyperbilirubinemia
  - Chap 24- Respiratory Distress Syndrome (p329-336)
3. UpToDate.com-Utilize this resource as needed to find current consensus on literature pertaining to your patients.