

NICU – UNMC Goals & Objectives
Neonatology Fellowship

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Preceptors: Ann Anderson-Berry, MD, PhD; Brianna Brei, MD; David Bolam, MD; Garth Fletcher, MD; Nathan Gollehon, MD; Harold Kaftan, MD; Courtney McLean, MD, MS; Eric Peeples, MD; John Schmidt, MD; David Soffer, MD; Terence Zach, MD; and Neonatal Nurse Practitioners (NNPs)

Where to Meet: UNMC NICU at 6:30 AM daily; Hours: 6:30a- 4:30p daily
Trainee Level: Fellow year 1, 2 and 3

GOALS

By the conclusion of fellow's rotations at University of Nebraska Medicine NICU during their 3-year fellowship, fellows will:

- Build a strong foundation to diagnose and manage problems seen in the continuum of development from the prenatal, intrapartum and neonatal periods. The fellows will organize and prioritize responsibilities to provide patient care that is safe, effective and efficient.
- Identify high-risk obstetrical patients to anticipate fetal and neonatal complications via consultation. Upon delivery, fellows will execute resuscitation, procedures and stabilization of neonates and infants based on their severity of illness. Fellows will also recognize the psychological implications of a sick newborn on the family
- Understand the physiology, altered structure and function of the fetus and the neonate in an acute illness to complex and chronic patients.
- Fellows will integrate into the interprofessional team to enhance patient safety and improve patient care. Fellows will coordinate care with subspecialists to optimize patient care including complex general surgical and neurosurgical patients.
- Fellows will demonstrate skill, knowledge and judgement in performing medical transports of critically ill neonates via air and ground transport.
- Fellows will demonstrate interpersonal and communication skills effective exchange of information to collaborate with patients, their families and other health care professionals.
- Fellows will lead the multidisciplinary team in a way that utilizes the team members' specific roles and capabilities, eliciting and valuing the perspective and contribution of others.

UNMC NICU

ROLES:

Fellows will oversee the management of the unit's patients in collaboration with a neonatologist, pediatric residents and neonatal nurse practitioners. Other disciplines such as respiratory therapists, neonatal dietician, and pharmacists, as well as NICU bedside RNs, case manager, and social worker may provide input during daily rounds. The attending neonatologist on service will make daily rounds on every patient and will provide supervision of all patient care. After hours, an on-call neonatologist is available for consultation. The fellow and neonatologist should be notified of all preterm and high-risk deliveries/admissions. Neonatal Nurse Practitioners are nurses with advanced degrees who function as care providers in collaboration with staff neonatologists. The NNPs are certified in neonatal resuscitation and stabilization and are skilled at NICU invasive procedures. They are present 24 hours/day and will assist fellows in attending all deliveries, providing daily patient care, and performing procedures as needed.

- **ROUNDS:** Fellows should arrive each morning in time to be updated on their patients by the previous oncall team (resident taking night call and NNP). It is expected that all patients will be examined with the plan of care formulated prior to rounds. Rounds typically start between 9:15 and 9:30 depending on the attending neonatologist. The resident or NNP will present each patient in a succinct manor followed by a discussion during which a plan of care will be formulated by the fellow with the neonatologist. Generally, residents and NNPs place orders in EPIC as patients are presented. The NICU dietician places orders in EPIC regarding feedings. On weekends when there is usually only one resident.

PATIENT COVERAGE:

- Pediatric interns and residents will be expected to carry a patient load of up to a maximum of 10 infants each with the remainder of the census being followed by the NNP team.
- The fellow on service will oversee the team in coordination with the neonatologist. All NICU fellow overnight call will occur with NNPs. Pediatric residents cover most nights, but not every night.
- Patient care is delivered by the fellow, house staff and neonatal nurse practitioners. There is an attending physician assigned to every patient. Management of the patients in the NICU is to occur continuously. When a fellow is present on the unit it is the expectation that he/she will participate in each delivery and admission within duty hours. The fellow will help assign new admissions generally to whoever is on call. Patient loads may need to be redistributed to accommodate this as well as in special circumstances such as high acuity and/or high census.
- During a fellow shift, the fellow is expected to co-manage ALL infants in the unit along with the NNPs and neonatologist. Once daily rounds are completed, all RN calls will be directed first to the on-call resident. Should a resident or NNP have questions or concerns regarding a patient or management plan, they will ask the fellow first. The fellow should keep the neonatologist informed of patient changes and new patients. If a fellow is oncall, it is expected that the fellow be readily available on the unit. If a fellow must leave for an extended period of time for education etc. please check with the NNP team. The resident on call will also be responsible for taking calls from normal newborn

nursery, which they will discuss with the fellow. Fellows will complete prenatal consults when requested. These tasks may be completed in collaboration with an NNP and neonatologist.

- The fellow on call is expected to attend all deliveries to which the NICU team is called. Prior to delivery verify that all needed equipment is at the bedside and functioning properly. Also before delivery, assign stabilization roles. One person (usually the intern or resident) “catches” the baby and delivers the infant from the L&D staff to the radiant warmer for resuscitation if needed. See the attached intubation algorithm for specifics on how to determine which team member intubates at a delivery if necessary. The fellow in collaboration with the residents and NNP is responsible for assigning Apgar scores and documenting events of resuscitation. In EPIC, Apgar scores are documented in the maternal chart in the delivery summary. The Neonatal Resuscitation Note must be completed in the infant’s chart. When admitting a patient to the NICU, in addition to documenting Apgar scores and a resuscitation note, also remember to complete a gestational age assessment, enter a dosing weight, and manage the problem list.
- For weekend calls, fellows will continue their daily duties. There are often only one resident on the weekends. The additional patients from the residents are absorbed by the NNP team. The residents are to make these arrangements with the NNP team the day/night before, making it clear which patients the NNP team will be responsible for on weekend days. Make sure all patients have a green folder with the patient’s name and room number that can be passed back and forth between teams.
- The fellow will supervise the residents and NNPs to make a plan regarding how procedures are to be divided. It is our basic philosophy that fellows will have the first opportunity for procedures. Once procedures have been mastered, fellows will oversee residents performing the procedures on resident call days. On NNP call days if there is an NNP student or a transport nurse in training they will be allowed to do the procedures. If these learners are not in the unit the procedures are usually divided up between the resident team.

CHARTING:

- When charting in EPIC, make sure to log in under NMC Neonatology to get the proper screens.
- Fellows will not be responsible for history and physicals or daily progress notes.
- Fellows must complete Procedure notes even if unsuccessful.
- Short Progress Notes should reflect any changes to the patient’s condition or medical plan. A note should be completed after speaking to staff as well as after speaking to consulting physicians so that the plan of care is obvious to others managing patients.
- Maternal Depression Screening (Edinburgh Postnatal Depression Scale) must be completed on all NICU mothers. Residents are responsible for completing the screens on their patients. Fellows will participate in the screening process. Maternal depression screening is completed when the infant is 7 days old, 1 month old, and then monthly thereafter until discharge from the NICU. Each time the screen is completed, document the mother’s answers in EPIC. Configure the EPIC patient list screen to include “mom’s

depression screen score” and “mom’s depression screen up to date” as a way to track when screens are due. The green check mark indicates that the screen has been completed and is up to date. The red X indicates that the screen is due/overdue. If the box is blank, the infant has not yet been admitted for 7 days. At 7 days, the blank box will change to a red X. There is a shared depression screening binder in the NNP office with more information and resources.

FELLOW OBJECTIVES:

CORE DOMAIN: PATIENT CARE

Fellow Year 1 are expected to:

- Understand High-risk obstetrical principles.
- Attend and manage resuscitation of the pre-term and full-term infant.
- Provide initial stabilization of sick infants of any gestational age.
- Resuscitate newborn infants with a variety of common neonatal illnesses, including extreme prematurity.
- Perform common procedures in the NICU.
- Understanding and identifying the types of infants who may or will require intensive care in a referral center, including those in which maternal problems may be greater than those of the infant.
- Consult subspecialists for additional care for infants.
- Experience with surgical, neurological, cardiac, and cardiovascular surgical conditions.
- Manage critically ill infants.
- Manage infants who are recovering from acute illness and now growing in preparation for discharge to a less intense community facility or home.
- Identify needs for transport to another facility or further care.
- Work towards a succinct and pertinent sign-out to the night team.
- Discuss all patient decisions with nurse practitioners and/or attendings for guidance and feedback.
- Listen to rounds and begin the process of running rounds, contributing to the attending’s plan.

Second Year Fellows are expected to:

- Anticipate changes in patient status
- Focus on long term plans for complex neonatal patients
- Effectively run interdisciplinary rounds
- Discussion with nurse practitioners with collegial decision making while keeping them up to date with changes.
- Run rounds with the attending present, but who stays quiet unless needed.
- Provide consultants and attending updates with concise and succinct information.
- Teach and coach on rounds, adjusting to level of training and topics of the learners interest.

- Provide succinct and pertinent sign-out to night team with anticipation of issues and contingency plans.

Third Year Fellow:

- Lead the team with patient decision making with input from the nurse practitioner team.
- Lead rounds with the attending present remotely or review plans after rounds.
- Tailor communication to the audience/consultant for the attended purpose.
- Teach learners physician exam findings and clinical skills.
- Provide succinct, pertinent and contingency hand-offs to your night team with minimal addition from the attending.
- As fellows are able to master the goals of the first and second year fellow, the senior fellow will focus to balance and oversee care of the entire NICU service including critically infants and infants in intensive care nearing discharge.

CORE DOMAIN: MEDICAL KNOWLEDGE

The ABP has a content specifications for Neonatal-Perinatal Medicine which identifies areas of study neonatology fellows will, by the conclusion of the fellowship, be familiar and able to manage as an independent neonatologist. Each fellow should be aware of the variety of subjects for which they are responsible and keep track of areas to which they have not been exposed directly. These areas will need to be covered via self-study or during fellow curriculum.

First year fellows should:

- focus on understanding the basic pathophysiology of common neonatal diseases: prematurity, RDS, PPHN, sepsis, IVH, HIE, etc.

Second year fellows should:

- focus on the pathophysiology behind complex neonatal disease processes like BPD, multisystem organ failure, multiple congenital anomalies, complex congenital heart disease.

Third year fellows should:

- focus on fetal diagnostics and therapeutics, integration of complex disease and treatment strategies while accumulating and expanding current literature related to neonatal care.

CORE DOMAIN: PRACTICE-BASED LEARNING & IMPROVEMENT

The fellow learns through investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care. They will focus on identifying strengths, deficiencies in knowledge and expertise to help improve patient care.

- Involvement with the quality assurance process (including, but not limited to, morbidity and mortality). Assisting in identification in systems errors.

Procedures:

- The following represents some specific skills a fellow must acquire in order to care for infants not requiring intensive or specialty care and to stabilize and initiate management on those who do. These are primarily mechanical skills. **Bold** includes required skills.
 - **Intubation**
 - **Peripheral Arterial Line (PAL)**
 - **Umbilical Arterial Line (UA)**
 - **Umbilical Venous Line (UV)**
 - **Neonatal Resuscitation**
 - **Code Resuscitation**
 - **Lumbar Puncture**
 - Peripheral inserted central catheter (PICC)
 - **Thoracentesis**
 - **Chest tube placement**
 - Pericardiocentesis
 - Abdominal Paracentesis
 - aEEG interpretation
 - Ventricular Tap
 - Double Volume Exchange Transfusion
 - Partial Volume Exchange Transfusion
 - ECMO Rounding
 - Circumcision
- The second group of skills is more cognitive yet represents important functions. There is no attempt to define the complete range of intellectual skills necessary for the diagnostic and management process.
 - Gestational age assessment
 - Growth classification
 - Thermal management
 - X-ray interpretation of the chest and abdomen
 - Oxygen administration by hood and nasal cannula
 - Ventilator Management including conventional, high-frequency oscillator, high-frequency jet ventilator
 - Fluid and electrolyte management
 - Nutrition
 - Arterial blood gas interpretation and management
 - Discharge Planning

First-year fellows will:

- do all procedures involving umbilical lines, airway, chest tubes and arterial lines, and join residents and APPs for procedures like lumbar punctures and arterial sticks, depending on you need.

Second Year fellows will:

- do the majority of complex procedures and join/coach any procedures you are not performing.

Third year fellows will:

- evaluate procedural needs, and advocate for specific ones you need while coaching any procedures you are not doing. As a leader, offer to run simulations for learners who are unable to do procedures.

CORE DOMAIN: INTERPERSONAL & COMMUNICATION SKILLS

The fellow will demonstrate communication and interpersonal skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

- Pre-delivery counseling.
- Communication with families on a daily basis and giving bad news.
- Consultation and effective communication with community physicians and subspecialists.
- Communication with pediatricians, family practitioners, obstetricians, nurses, nurse practitioners, transport staff, respiratory therapists (RTs), social workers (SWs), nutrition, house officers, medical students and other members of the care team.

First year fellows will:

- Focus on establishing effective work relationships with our interprofessional NICU team.
- Discuss all patient decisions with nurse practitioners for guidance and feedback.
- Listen to rounds and begin the process of running rounds, contributing to the attending's plan.
- Assist the neonatologist in updating families each day.
- Call the majority of new consultations and communicate their recommendations with your team.
- Teach learners topics of your choice.
- Work towards a succinct and pertinent sign-out to the night team.
- Arranging and attending all family meetings.
- When delivering bad news, they should review with the attending beforehand and attending together.
- On transport calls, focus on gathering the history and pertinent details of the patient. Communicate any incoming admission to the NICU charge nurse and NNPs.

Second year fellows will:

- Focus on cultivating your established relationships by understanding and appreciating all the members on our interdisciplinary team.
- Discussion with nurse practitioners with collegial decision making while keeping them up to date with changes.
- Run rounds with the attending present, but who stays quiet unless needed.
- Provide consultants and attending updates with concise and succinct information.
- Teach and coach on rounds, adjusting to level of training and topics of the learners interest.
- Provide succinct and pertinent sign-out to night team with anticipation of issues and contingency plans.
- Run family meetings with the attending as back up.
- When delivering bad news, fellows should have the attending as back-up for coaching.
- Begin focusing on long-term care planning and communication skills.
- On transport calls, you should be gathering the history and data collection and be able to provide recommendations for the referring facility without significant interruption/addition from the attending.

Third year fellows will:

- Focus on providing leadership skills, team building and coaching for our interdisciplinary team by facilitating group discussions and problem-solving.
- Lead the team with patient decision making with input from the nurse practitioner team.
- Lead rounds with the attending present remotely or review plans after rounds.
- Tailor communication to the audience/consultant for the attended purpose.
- Teach learners physician exam findings and clinical skills.
- Provide succinct, pertinent and contingency hand-offs to your night team with minimal addition from the attending.
- Run family meetings without the attending present.
- When delivering bad news, fellows should be able to delivery bad news without direct supervision.
- Focus on communication skills and nuances of patient care.
- On transport calls, should complete the entire transport call without any addition from the attending for most straightforward and complex cases.

CORE DOMAIN: PROFESSIONALISM

The fellow will demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. The fellow will provide accurate and adequate check out to the on-call resident or NNP before leaving for education or post call. Fellows will be prompt for all of their clinical and educational sessions.

First Year Fellow will:

- Conduct yourself with professionalism with high standards of ethical behavior.
- Build your trustworthiness for patient care with your team by building your foundation of knowledge, understanding your patients and communication skills.
- Build your leadership skills by creating a foundation of open communication, discussion and engagement in your team for decision making.
- Recognize the uncertainty and limited control in certain aspects of patient care.

Second Year Fellow will:

- Conduct interactions with a professional mindset and sense of duty.
- Continue to build your trustworthiness by following up on tasks, identifying insight into you limits and anticipate your patient's needs.
- Lead your team in an organize manner and open communication.
- Utilize uncertainty and ambiguity and help patient's families and care team to understand.

Third Year Fellow will:

- Have insight into your professional and ethical behaviors to identify areas for yourself and your team's improvement.
- You have built your trustworthiness with your team and need little prompting for follow-up. Assume full responsibility for your patients and anticipate problems.
- Provide leadership skills to enhance the team function, learning environment and ultimately improving patient care.
- Anticipate uncertainty in patient care.

CORE DOMAIN: SYSTEMS-BASED PRACTICE

The fellow will demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. The fellow will learn appropriate use of diagnostic and screening labs and imaging, as well as appropriate use of consultants. Basic training in utilization management, ethics, cost of care, treatment options, medical-legal issues, and effective documentation.

First Year Fellow will:

- Begin to understand and integrate yourself into the NICU's systems incorporating our referral base, consultants, workflow and hospital.
- Understand the patient care coordination within our division.

Second Year Fellow will:

- Using your knowledge of our system, be able to shift easily between health care systems.
- Involve patient's family with the care coordination and assist in the transition of care for our patients into home and post-hospital follow-up.

- Allow optimization of a patient's work-up with cost effectiveness and risk/benefit in mind.

Third Year Fellow will:

- Help families navigate the complex health care system in the NICU and prepare for being discharge from the NICU with a complex infant.
- Provide complete transition of care to the primary care physician for our simple and complex neonatal patients.
- Utilize cost-effectiveness and risk/benefit not just for single patients, but the population/system as a whole.

EVALUATION

- Fellows should receive in-the-moment feedback throughout their rotation with specific feedback at the end of the week with your attending.
- The fellow will be evaluated at the conclusion of the month and receive a formal evaluation in regard to the fellow's abilities in patient care, professionalism, medical knowledge, interpersonal and communication skills, systems-based practice, and problem-based learning and improvement.