TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER™ EL PASO

Paul L. Foster School *of* Medicine
Department of Pediatrics

Pediatric **NICU** Selective

MSIV Rotation Syllabus

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MSIV Clerkship Objectives
During this 4 week rotation, the medical student will be exposed to a variety of neonatal patients with complex medical conditions requiring extensive intervention and management.

Office of Accessibility Services
TTUHSC EP is committed to providing access to learning opportunities for all students with documented learning disabilities. To ensure access to this course and your program, please contact the Office of Accessibility Services (OAS) by calling 915-215-4398 to engage in a confidential conversation about the process for requesting accommodations in the classroom and clinical setting. Accommodations are not provided retroactively, so students are encouraged to register with OAS as soon as possible. More information can be found on the OAS website: https://elpaso.ttuhsc.edu/studentservices/accessibility/default.aspx

Counseling Assistance
TTUHSC EP is committed to the well-being of our students. Students may experience a range of academic, social, and personal stressors, which can be overwhelming. If you or someone you know needs comprehensive or crisis mental health support assistance, on-campus mental health services are available Monday- Friday, 9 a.m. – 4 p.m., without an appointment. Appointments may be scheduled by calling **915-215-TALK (8255)** or emailing support.elp@ttuhsc.edu. The offices are located in MSBII, Suite 2C201. Related information can be found at https://elpaso.ttuhsc.edu/studentservices/student-support-center/get-connected/ Additionally, the National Suicide Prevention Lifeline can be reached by calling or texting **988**.

Reporting Student Conduct Issues:
Campus community members who observe or become aware of potential student misconduct can use the Student Incident Report Form to file a report with the Office of Student Services and Student Engagement. Student behaviors that may violate the student code of conduct, student handbook, or other TTUHSCEP policies, regulations, or rules are considered to be student misconduct. This includes, but is not limited to, plagiarism, academic dishonesty, harassment, drug use, or theft.

STATEMENT OF ACCOMMODATION FOR PREGNANT AND PARENTING STUDENTS

To support the academic success of pregnant and parenting students and students with pregnancy related conditions, Texas Tech University Health Sciences Center El Paso offers reasonable modifications based on the student's particular needs. Any student who is pregnant or parenting a child up to age 18 or has conditions related to pregnancy are encouraged to communicate their needs with their faculty and/or program for academic support. Students may also contact Norma Fuentes, the Manager of Accessibility and Student Advocacy, to discuss support options. She will work with the institution's designated Pregnancy and Parenting Liaison to ensure equal access to the University's education program or activity. Please email norma.fuentes@ttuhsc.edu or call 915.215.4398. Students may also submit a Pregnancy & Parenting Support form to request assistance.

For more information, please refer to Texas Tech University System Regulation 07.15 – Pregnancy and

[Parental Status](#).

TTUHSC El Paso Campus CARE Team:
The university CARE Team is here to support students who may be feeling overwhelmed, experiencing significant stress, or facing challenges that could impact their well-being or safety. If your professor notices any signs that you or someone else might need help, they may check in with you personally and will often connect you with the CARE Team. This is not about being "in trouble"—it's about ensuring you have access to trained professionals who can offer support and connect you to helpful resources. Additionally, if you have any concerns about your own well-being or that of a fellow student, please don't hesitate to reach out to let your professor know. You can also make a referral to the CARE Team using [CARE Report Form](#). Your health, safety, and success are our top priorities, and we're here to help.

Course Goals
Patient Care

➢ Goal: Students, together with supervising faculty will be able to provide patient care that is compassionate and effective for the treatment of problems associated with the critically ill newborn. The student is responsible for gathering essential and accurate information about their patients and following and understand his or her patients' medical conditions throughout the rotation. (PC 1.1, 1.2, 1.3, 1.4, ,1.6; IC 7.1, 7.3; ICS 4.1, 4.2, 4.4, 5.3, 5.7)

❖ Objectives:

- Follow a minimum of 2 patients in the level III nursery daily, writing daily notes and presenting his or her patients during rounds each day. When the patients are transferred to the level II nursery for convalescence, they should continue to follow them until discharge while acquiring additional level III patients. (1.1, 1.2, 1.3, 1.6, 4.1, 4.2, 4.4)
- Participate in the call cycle with the team's senior resident, attending high risk deliveries during this call and staying to present his or her patients on rounds. (1.4, 5.3, 5.7)

- Learn to obtain a complete maternal/family history, perform a physical examination on preterm and term neonates, and assess the pattern of fetal growth, nutritional status and well-being of the preterm and term neonate after birth. (1.1, 1.3)
- Make informed recommendations about diagnostic and therapeutic interventions based on physical examination, physiologic monitoring, laboratory data, best medical evidence, and clinical judgment (e.g., neonates with perinatal asphyxia or complications of prematurity). (1.3, 1.2)
- Together with the attending, communicate plan of care to the parents. Example: Plan of care for borderline preterm on mechanical ventilation due to HMD or nothing by mouth with low intermittent suction for abdominal distention while infant being evaluated for feeding problems or obstruction. (1.6, 4.1, 4.2, 4.3)
- Work with health care professionals, including those from other disciplines e.g., obstetric team, respiratory care, nutritionists, pharmacology, nursing, social services and rehabilitation), to provide patient-focused care and development and execution of patient management plans. (1.4, 7.1, 7.3)

❖ Assessment:

- One complete neonatal physical exam reviewed by neonatology faculty or a second year resident in the first week of rotation and notifying the clerkship director upon completion.
- One complete H&P weekly on a patient the student if following meeting op-log requirements for the NICU.
- Weekly clinical evaluations by faculty, residents, PA, or nurse practitioners.

Medical Knowledge

➢ Goal: Students will demonstrate knowledge about established biomedical/clinical science and evidence based information applying this knowledge to the care their patients. They must understand the approach to establishing a differential diagnosis in the sick neonate. (KP 2.1, 2.2, 2.3, 2.5, 2.6, 5.4, 1.5, 1.8, 6.3, 6.4)

❖ Objectives:

- ▪ Demonstrate understanding of the normal transition process occurring at birth, how these are modified in preterm and ill term birth and how these changes in the term or preterm neonate result in specific disease processes.
    - ✓ Learn pulmonary transition in the normal term infants versus preterm infants and the effect of disease on this transition. (KP 2.1, 2.2, 2.3, 2.6)
    - ✓ Learn cardiovascular transition immediately after birth in the normal term infant versus the preterm and the effect of sepsis or asphyxia on the immediate and short term transition. (KP 2.1, 2.2, 2.3, 2.6)
    - ✓ Learn to evaluate and manage fluid and electrolytes in the preterm and ill term neonate during the first 72 hours of life. (KP 2.1, 2.2, 2.3, 2.6)
- ▪ Understand the principles of neonatal resuscitation and stabilization including the ethical dilemmas in decision making in the delivery room and the role of prenatal counseling prior to birth. (2.2, 2.3, 1.5, 5.4)
    - ✓ Understand the process of bag and mask ventilation in the term and preterm infant and practice via simulation.(1.8, 2.2, 2.3)
- ▪ Understand the varying patterns of fetal growth, postnatal problems associated with abnormal fetal growth (SGA, IUGR and LGA), and how to meet the nutritional needs of the preterm neonate in order to promote postnatal growth. (2.1, 2.2, 2.3)
- ▪ Understand the role and purpose of intensive care for the neonate, the short and long-term ethical, societal and philosophical concerns, and the reason to obtain and assess ongoing outcome data. (2.5, 6.3, 6.4, 5.4)

❖ Assessment:

- ▪ Weekly clinical evaluations by faculty, resident, PA, or nurse practitioners.
- ▪ Attend L&D with the High Risk Team and document each delivery attended.
- ▪ Attend Special Care Clinic and document each patient presented to faculty with the resident.
- ▪ Each Friday after the NICU lecture, students will give a copy of L&D and SCC patient encounters to the clerkship director or faculty attending. It is expected that the student will read about these patient encounters to be able to discuss with attending faculty or the clerkship director.

Practice-Based Learning and Improvement

➢ Goal: Students must be able to assimilate scientific evidence and improve their patient care practices. (3.1-3.5)

❖ Objectives:

- ▪ Find and study evidence from scientific studies related to their patient's medical problems.
  Example: Randomized controlled trials of therapy for Hypoxic Ischemic Encephalopathy. (3.1, 3.4)
- ▪ Observe how to the NICU identifies practice problems and the process used to improve overall patient care through practice or quality improvement. (3.2, 3.5)
- ▪ Use information technology to manage information, access on-line medical information, and support the student's education. (PBL 3.1, 3.2, 3.4)

❖ Assessment:

■ Weekly evaluations by faculty, resident, PA, or nurse practitioners.

Interpersonal and Communication Skills

➢ Goals: Students will be able to demonstrate interpersonal and communication skills that result in effective information exchange with Neonatal Intensive Care, Newborn Nursery, and Labor and Delivery team members and patient families. (ICS 4.1, 4.2, 4.3, 1.4))

❖ Objectives:

■ Give clear, concise, well-organized presentations on rounds, exchange patient information effectively with members of the care team and participate in rounds during other patient presentations. (4.2, 4.3)
■ Learn to transfer care. (4.2, 1.4)
■ Explain critically ill infant's problems and treatments in appropriate lay person's terms to parents, ensuring their comprehension of their infant's illness. (4.1, 4.3)

❖ Assessment:

■ Weekly evaluations by faculty, resident, PA, or nurse practitioners.

Professionalism

➢ Goals: Students must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. This includes: timely arrival for each student's own patient evaluation: timely arrival and preparation prior to presentation for rounds: remaining attentive during patient presentations by other team members: and participating in discussions about patient care. (ICS 4.1, 4.3; P 5.1, 5.2, 5.3, 5.4, 5.6, 5.7)

■ Objectives:

- Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and their families that supersedes self-interest; accountability to patients and the profession, and a commitment to excellence and on-going professional development. Example; willingness to seek additional patients for evaluation. (5.1, 5.3, 5.6, 5.7)
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care and confidentiality of patient information. (5.2, 5.4)
- Demonstrate sensitivity and responsiveness to patients and their families.

❖ Assessment:

■ Weekly evaluations by faculty, resident, PA, or nurse practitioners.

Systems-Based Practice

➤ Goals: Students must demonstrate how to practice quality health care and learn to become advocates for their patients within the Neonatal Intensive Care environment. (SBP 6.1, 6.2, 6.4; PC 1.4, 1.5, 1.2)

❖ Objectives:

- Understand the criteria for attending high risk deliveries and criteria for admission to the neonatal intensive care nursery. (6.1, 6.4, 1.5)
- Discuss the importance of reducing errors and infections in the critical care area and identify mechanisms for reducing errors and nosocomial infections.(6.3, 3.5, 1.4, 1.2)
- Learn the importance of initiating early discharge planning and participate in the discharge planning of his or her patients. (6.1, 6.2, 6.4)

❖ Assessment:

- Weekly evaluations by faculty, resident, PA, or nurse practitioners.
- Evaluation of student's attendance and participation in weekly Discharge Planning.

Inter-professional Collaboration

➤ Goals: Demonstrate the ability to engage in an inter-professional team in a manner that optimizes safe, effective patient and population-centered care. (7.1-7.4)

❖ Objectives:
- Recognize one's own role as well as the roles of other health care professionals (7.1, 7.2)
- Engage effectively as a team member during daily rounds and be able to manage conflicts appropriately (7.3, 7.4)

❖ Assessment:

- Weekly evaluations by faculty, resident, PA, or nurse practitioners.

Personal and Professional Development
➤ Goals: Demonstrate the qualities required to sustain lifelong personal and professional growth. (8.13.1)
❖ Objectives:
- ❖ Recognize when to call a consult for a patient (8.1, 8.4)
- ❖ Identifies one's limitations and seek self-improvement through problem identification and critical appraisal of information (8.1, 3.1)
- ❖ React appropriately to stressful and difficult situations (8.2, 8.3)
- ❖ Demonstrate improvement following mid-rotation feedback (3.1)

❖ Assessment:

 ▪ Weekly evaluations by faculty, resident, PA, or nurse practitioners

Op-Log Requirements
The student will enter patients into the Op Log weekly.

Required Patient Encounters the student must see at the level of Observe, Assist or Manage:

- Assist or Manage: Infant with respiratory failure requiring respiratory support and assessed with a CXR and blood gas.
- Assist or Manage: Infant with risk factors and clinical finding of sepsis (late onset or congenital) requiring evaluation for sepsis and antibiotic treatment.
- Assist or Manage: Infant with metabolic derangements such as hypoglycemia and/or hypocalcemia.
- Observe, Assist or Mange: Infant with hyperbilirubinemia requiring phototherapy and close lab monitoring
- Observe, Assist or Manage: Late preterm neonate with surfactant deficiency and Respiratory Distress Syndrome
- Observe, Assist or Manage: Late preterm neonate with hemodynamic instability requiring management with pressers

In rare circumstances it may be necessary to assign students computerized cases, simulations, or special readings to achieve objectives that are not being met through actual patient care.

The acquisition of medical assessment skills will be assessed weekly via clinical and simulation experience conducted and/or observed by the neonatology faculty. The students will be expected to attend high-risk deliveries whenever possible and learn the basics of neonatal resuscitation and stabilization. They will attend parents counseling sessions with the neonatologist covering that rotation as the L&D attending in order to learn more about this aspect of care of the high-risk pregnancy.

During this 4 week rotation, the medical student will be exposed to a variety of neonatal patients with complex medical conditions requiring extensive intervention and management.

Daily Work Day:
Your role will be similar to that of the intern. This includes writing admission and daily progress notes. You will assume responsibility for the daily assessment and management plan for your patients, as well as daily communication with families. You will also attend deliveries with supervision by a resident or NNP. Typically you will see your patient along with an intern and/or resident. Discuss all orders with the intern, resident and/or fellow. Write daily progress notes on your patients with signature by your intern or resident. You will be expected to follow patients, present on rounds, sign-out your patients to the on-call resident or NNP prior to leaving for the day. Check-in with your resident or fellow to review plans for your patients before you leave.

Procedures:

You should do necessary procedures on your patients under the supervision of an MD or NNP. Given the fragility of NICU patients this will be subject to the judgment of the attending, fellow or resident. Be assertive about asking to do procedures and asking for supervision, but understand that on occasion this will not be possible.

Didactic Presentation:

In addition to patient care activities in the NICU, the student will prepare a didactic presentation, approximately 30 min in length for presentation to the team. This will generally be scheduled for the last week of your month. You may do a case presentation or choose a topic of interest. Discuss and arrange the time and date with your attending.

Grading

The NICU clerkship director/and faculty attending are responsible for ensuring that each student is being exposed to appropriate clinical experiences. The clerkship director will meet with the student at the beginning of the rotation to review the selective syllabus and to discuss expectations and procedures. The clerkship director and/or faculty attending will also meet with the student at the end of each week to review their patient care experiences. For excused absences beyond the 3 allowed, the student will be allowed to make-up the days missed on the weekend during their 4 week rotation. If they find they are not prepared to present a topic assigned on rounds they will be allowed to present the following non-post call weekday.

There will be a mid-rotation and end of rotation evaluation that will be performed by the attending faculty the student rounds with the first and last two weeks of the rotation. The attending faculty will go over the content of these evaluations with the student. All of the competency assessments need to be performed and on tract. For those assessments that have written assessments or history and physical to be done, half of the required number need to be done by mid-rotation evaluation for a passing evaluation and all have to be done by the final evaluation to help support a passing grade.

➢ Criteria for Fail/Pass/Honors

❖ Rotation Failure is 3 or more needs improvement at the time of final assessment after no improvement upon notification on the mid-rotation evaluation and feedback one week after the mid-rotation evaluation. Any needs improvement in professionalism on the final evaluation is an automatic fail.
❖ Rotation Pass is < 3 needs improvement and < 4 above averages on the mid-rotation and final evaluation.
❖ Rotation Honors is ≥ 4 above averages with no below averages and agreement by the faculty, and residents that the student is functioning above average in all competencies.

Assessments and Evaluations
Students will be given evaluation sheets to be given to interns, senior residents and direct supervising faculty. The evaluations will be returned to sub-intern evaluation folder in the hospitalist office and to their Elentra Folder. The course director will review the evaluations at the midpoint and final evaluation. The evaluation will help the student to identify strength and weakness, for further improvement. Student will need one evaluation per week.

Mid-Rotation Evaluation will include review of individualized learning plan, H&Ps, Progress notes and one discharge summary, one set of mock prescriptions, one admission order set and two evaluations.

Template

MS4 Mid-Clerkship Assessment

Patient Care and Procedural Skills

Completes an appropriate history

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Addresses patient's agenda

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Exam is appropriate in scope.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Independently performs exam with proper technique.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Identifies pertinent physical findings.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Develops a treatment plan

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Incorporating biophysical issues, appropriate to the patient

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Appropriately documents findings.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Medical Knowledge

Can independently apply knowledge

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Interpersonal and Communication Skills

Demonstrate sensitivity, compassion, integrity, and respect for all people

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Presentations to faculty or resident are organized.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Practice-Based Learning and Improvement

Demonstrates knowledge of current peer-reviewed literature in relation to patient management.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Takes the initiative in increasing clinical knowledge and skills

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Systems-Based Practice

Effectively utilizes medical systems and resources to benefit

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Professionalism

Is reliable and demonstrates accountability to patients and fellow members of the health care team.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Demonstrates compassion and respect for all people

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Demonstrates honesty in all professional matters.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Protects patient confidentiality

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Dress and grooming appropriate for the setting.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Interprofessional Collaboration

Works collaboratively with other health care personnel including nurses, technicians, and other ancillary personnel

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Is an important, contributing member of the assigned team

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Functions effectively as a team member by preparing for collaborative experiences.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Personal and Professional Development

Recognizes when to take responsibility and when to seek assistance.

○ Needs Improvement ○ Pass ○ Honors ○ Cannot Assess

Final Evaluation will review H&Ps, progress notes, one discharge summary, one mock prescriptions and one admission orders done after mid-rotation and before final evaluation.

Final Clerkship Assessment

Knowledge for Practice

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Patient Care and Procedural Skills

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Interpersonal and Communication Skills

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Practice-Based Learning and Improvement

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Systems-Based Practice

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Professionalism

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Interprofessional Collaboration

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Personal and Professional Development

Grade

○ Needs Improvement   ○ Pass   ○ Honors

Please Justify the grade in this competency

Preparation for Teaching

Attending faculty and residents (see below) will be oriented to the experience by the NICU clerkship director and provided electronic copies of the syllabus and evaluation form that they will use to assess student performance. Residents will be required, as part of their training and orientation, to function as teachers. All residents are required to participate in a "Residents as Teachers" program that is administered by the Office of Graduate Medical Education. In addition, each resident will be provided copies of the Medical Student NICU syllabus with particular emphasis on goals, objectives, and assessment methods and criteria.

The Department of Pediatrics' Neonatology faculty was involved in the creation and development of the curriculum. present all instruction and clinical activity occurs in the Children's Hospital of El Paso, University Medical Center   At Newborn Nursery and University Medical Center Labor and Delivery. Each faculty member will receive copies of the curriculum, goals and objective. The neonatal intensive care clerkship director will communicate with participating faculty to review program expectations before the start of each student's rotation.

Respiratory Videos

Please review two mini lectures on respiratory support modalities available in the NICU to aid in your patient management. Recommend watching after reading respiratory distress article.

Required Reading

Article	Suggested Time Frame
Neonatal Resuscitation Program Lesson Three	Prior to start of rotation
Neonatal Resuscitation Program Lesson Four	Prior to start of rotation

Neo Reviews Core Concept: Respiratory Distress in term and near term infants	First week of rotation
Neo Reviews Core Concept: Respiratory Distress Syndrome	While managing patient with this op log required diagnosis
AAP Clinical Report: Management of Neonates born at >35w GA with suspected or proven early onset sepsis	While managing patient with this op log required diagnosis
AAP Clinical Report: Postnatal Glucose Homeostasis in Late-Preterm and Term Infants	While managing patient with this op log required diagnosis
Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or more weeks Gestation	While managing patient with this op log required diagnosis

Quizzes - Ungraded but mandatory. These are mostly to check your learning and identify areas for improvement

Quiz	Suggested Time Frame
NRP Basics	First week of rotation
Fluids, Electrolytes, Nutrition Calculations	Second week of rotation
Blood Gas Scenario 1	After reviewing respiratory videos
Blood Gas Scenario 2	After reviewing respiratory videos

Reference Textbooks:

- Klaus and Fanaroff: Care of the High Risk Neonate, 6th edition.
- Gomella's Neonatology, 8th edition
- Fanaroff and Martin: Neonatal-Perinatal Medicine, 10th edition.
- Avery: Avery's Diseases of the Newborn, 9th edition
- Cunningham: Williams Obstetrics, 24th edition.
- Volpe: Neurology of the Newborn, 5th edition.
- Smith: Recognizable Patterns of Human Malformation, 7th edition.
- Polin and Fox: Fetal and Neonatal Physiology, 4th soon 5th edition.
- Rudolph's or Nelson's Textbook of Pediatrics, 20th edition.
- Redbook 2015, 30th Edition.
- Assisted Ventilation of the Neonate, Goldsmith and Karotkin 6th edition