

UNIVERSITY OF MICHIGAN HEALTH SYSTEM · DEPARTMENT OF EMERGENCY MEDICINE
PEDIATRIC EMERGENCY MEDICINE FELLOWSHIP PROGRAM

Rotation:	Neonatal Intensive Care
Institution:	University of Michigan Mott/Holden NICU
Duration:	One (1) Month
Fellow Training Year:	Fellow Year 1
Supervising Faculty:	Robert Schumacher, MD

EDUCATIONAL GOALS:

1. PEM Fellows will become familiar with basic principles of neonatal emergencies including evaluation and management of the newly born premature infant. *Competencies: MK, PC*
2. PEM Fellows will learn how to care for neonates/newborns requiring critical interventions, including indications for and technical skills required for resuscitation, critical procedures (neonatal advanced and vascular access skills) and post resuscitation care. *Competencies: MK, PC*
3. PEM Fellows will be familiar with pharmacologic management of neonates *Competencies: PC, MK*
4. PEM Fellows will learn to discuss neonatal problems, management and therapies using culturally sensitive and compassion when communicating with families. *Competencies PC, MK, IC, P*

OBJECTIVES:

1. Demonstrate basic knowledge of the natural history of pathophysiology of neonatal disease processes. *Competencies: MK*
2. Demonstrate the basic skills required for neonatal resuscitation and the management of critically ill neonates. *Competencies: MK, PC*
3. Demonstrate the ability to perform the procedures commonly used in the care of critically ill neonates – including venipuncture, arterial puncture, umbilical artery and vein cannulation, endotracheal intubation, orogastric tube placement, lumbar puncture, bladder aspiration, chest transillumination, thoracentesis, and thoracostomy. *Competencies: PC*
4. Demonstrate the ability to interpret and utilize blood gas data in the management of sick neonates, including knowledge of normal values and variations that occur with different sampling sites and abnormalities that occur with respiratory and metabolic acidosis and alkalosis. *Competencies: MK, PC*
5. Demonstrate basic skills of ventilator management. *Competencies: MK, PC*
6. Demonstrate ability to interpret chest, abdominal and skull x-rays, cranial sonograms and GI studies. *Competencies: MK, PC*
7. Become familiar with common medications used in the NICU such as surfactant, pressors, antibiotics and diuretics. *Competencies: MK, PC*
8. To gain interpersonal/communication skills and a level of professionalism needed to act as an integrated team member with nurses, technicians, clerks, fellow residents, staff, etc. *Competencies: ICS, P*
9. To gain interpersonal/communication skills needed to effectively interact with patients and families. *Competencies: ICS, P*
10. Learn to effectively work with multiple consultants in complex medical cases. *Competencies: ICS, SBP, P, PC*
11. Demonstrate an awareness of and participate in patient safety efforts and identification/reporting of system errors. *Competencies: SBP, PC, PBLI, P*
12. Successfully complete APLS certification. *Competencies: MK, PC*

Accreditation Council for Graduate Medical Education (ACGME) Core Competency Key:

PC = Patient Care; MK = Medical Knowledge; PBLI = Practice-Based Learning and Improvement; IC = Interpersonal and Communication Skills; P = Professionalism; SBP = Systems-Based Practice

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13. Successfully complete NRP certification. *Competencies: MK, PC*
14. Participate in a minimum of 10 neonatal resuscitations. *Competencies: MK, PC, SBP, P, ICS*

DESCRIPTION OF CLINICAL EXPERIENCE:

Fellows spend one month during the first year in the 40-bed Holden NICU. This unit cares for patients with the full spectrum of neonatal disease, including congenital heart disease. Fellows are responsible for approximately 5-8 patients at a time with supervision by senior pediatric residents, NICU fellows, and NICU attendings. They take call every 4 days with a senior pediatric resident; while on call, fellows cover the NICU and evaluate infants in the normal newborn nursery who become ill. Responsibilities include participating in daily patient care rounds, management of common ICU problems such as ventilation, fluids & electrolytes, nutrition and infections, attending high-risk deliveries and participating in resuscitations. Fellows also perform a number of different procedures under the supervision of pediatric residents, fellows or faculty. Fellows are supervised in compliance with UMHS/GME/Fellowship Program Supervision policies while on this rotation. Fellows are required to be in compliance with UMHS/GME/Fellowship Program Duty Hour Reporting policies while on this rotation.

DESCRIPTION OF DIDACTIC EXPERIENCE:

There is a resident teaching session at 8am. Monday through Friday. Fellows are released to attend Pediatric Emergency Medicine Conferences on Wednesdays.

EVALUATION PROCESS:

Fellows are evaluated in writing by the NICU Faculty at the completion of the rotation. Fellows are evaluated in the areas of Patient Care, Medical Knowledge, Practice Based Learning, Professionalism, Interpersonal Skills and System-Based Practice. Fellows are also evaluated on procedural and resuscitation competence. Fellows likewise evaluate their experiences after each rotation as well. Evaluations are forwarded to the Program Director and made available in aggregate to individual fellows via the MedHub system at all times. Formal review of fellow evaluations occurs at quarterly PD/Fellow meetings.

FEEDBACK MECHANISMS:

Specific problems or notations of excellence identified through verbal or written communication to the Program Director regarding the fellow are immediately brought to the attention of the involved fellow. Fellows receiving an overall poor performance grade (less than satisfactory evaluation for rotation) are notified immediately and meet with the PD. Fellows who receive notation for improvement in some areas (but pass the overall rotation) are given a work plan for educational intervention with specific timeline for completion and reevaluation. Fellows who do not pass an overall rotation will meet with the PD for remediation work plan, including timetable for reevaluation and UMHS notifications as required by GME. Monthly evaluations are placed in the fellow's file and are available for review at any time online via MedHub by the fellow, but are also reviewed during quarterly meetings with the PD. Fellows are

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encouraged to review their files regularly and at least monthly.

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ATTACHMENT: NEONATAL INTENSIVE CARE UNIT TEAM AND ROUNDING SCHEDULE

Main Points:

- Start time 7 a.m.
- Sign out between 4 and 6 p.m.
- There are 4 teams, seniors and interns alternate call to facilitate getting out post-call (i.e.- interns are not on with their senior)
- ER residents have protected time to attend their conference on Wed AM from 7:30-10:30 (consider this their clinic and please help them get there)
- On the first day of service, residents who do not have a neonatal stethoscope should bring a check to place as a deposit for a stethoscope and textbook loaned by the NICU. This can be picked up at the NICU office in the 5 Mott extension (hallway where the call rooms are on 5).
- Orientation by NICU staff will occur in the first week.

Nitty-Gritty:

The NICU service is divided between four teams: Red, Yellow, Green and Orange. Each team will consist of 1 senior resident and 1-2 interns as well as sub-interns. NNPs are assigned to cover all four teams. They act as fellow equivalents on call nights and are a wonderful resource.

Every fellow should be ready to start the day in the NICU by 7:00 AM

The schedule below outlines a typical day.

7:00-7:15	TEAM MEETING. All team members including NNP to identify roles for the day (e.g. covering senior, who is in clinic, delivery, transport, etc.).
7:15-8:00	Pre-round
8:00-9:00	CONFERENCE – Wednesday + Friday will be NICU based conferences. Other days conferences include core conferences as described on last page of document.
9:00-11:00	Work Rounds
11:00-12:00	Work Period
12:00-1:00	Noon Conference or work period. Overnight residents must transfer care and depart
1:00-5:00	Work Period
1:30	X-Ray rounds (Fridays)
5:00	Transfer of Care to on call residents

Call:

Call is every 4th night.

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Senior residents/fellows will be on call with interns from opposite teams. Patients admitted overnight will remain on the intern's team. In situations where several patients were admitted overnight and it makes sense to redistribute, the patients should be preferentially transferred to the post-call senior's team since they will be familiar with the patients.

The Family Medicine intern on the newborn service will take 2 Saturday NICU calls per month. The intern will arrive in the NICU after completing newborn rounds, and will remain with the on-call team until completing of post-call rounds on Sunday morning. The family medicine intern must depart the unit prior to 1:00PM.

The post-call interns and senior residents/fellows must complete their work and depart for home by 1:00 PM the following day.

The senior residents/fellows must coordinate with the NNPs in planning days off to ensure supervisory coverage in the unit at all times.

Days Off:

All residents and PEM fellows are allowed 4 days off per month. It is expected that days off will be taken on weekends, unless this is impossible given service coverage needs. Senior residents/fellows on service are expected to facilitate the identification of days off throughout the month for all team members. **Senior residents/fellows should not take their interns' post-call days off as this makes it difficult for the intern to depart by 1 p.m.** It is the senior resident's/fellows' responsibility to identify a covering senior resident or NNP for the service on days off, to ensure adequate team coverage for the service, and to notify attendings/NICU fellows of expected days off to facilitate patient care.

Arrange the schedule for days off with others on your service on the first of the month, keeping in mind clinic days, the requirement of post-call departure by 1:00 pm, and the need to provide adequate service coverage.

Transfer of Care

- The post-call team should transfer care to the NNP on their team or to the on-call senior resident/PEM fellow. If the NNP or on-call resident are not available (rotating senior on-call or service senior or in clinic or NNP on transport), then the post-call team should transfer care to the covering senior resident or NNP.
- Interns should sign out their patients to covering interns.
- Fellows not on call should expect to sign-out between 4:00 and 6:00 PM to the on-call team.

Clinic:

- For interns, post-call clinics will be identified and cancelled. (One ½ day/week).

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- For senior Peds residents, post-call clinics will be identified and cancelled. (One ½ day/week).
- Rescheduling and cancellation of post-call clinics will be facilitated by Steve Park and Kim Andrus.
- ER rotators are generally released to attend ER or Pediatric EM conference Wednesdays from 11:30AM-4:30PM while rotating on pediatrics.

Reviewed		11/2006		06/30/2009	4/2011		
Revised	06/2005		11/2008			07/05/2011	
Initial(s)	MN	MN	MN	MN	MN	sb	