

Pediatric ICU Rotation

ROTATION DIRECTOR: RASHED DURGHAM, MD

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I. Rotation Overview

Floating Hospital's Pediatric Intensive Care Unit offers multidisciplinary critical care services to all pediatric patients, including intensive care of all pediatric disorders, transport of critically ill patients and emergency medicine.

The Pediatric ICU Rotation is a 2 week mandatory rotation. We try to get our fellows to rotate through the PICU in the latter half of the fellowship year. The fellow functions as a member of the care team during their rotation along with other pediatric medicine residents. They work under the supervision and guidance of the PICU Attending. They begin their day at 7AM and pre-round on their patients. There after they attend the daily work rounds which start at 8AM. After the rounds they are expected to get involved in all aspects of patient care in the unit, including performance of diagnostic and therapeutic procedures. The rotation gives a good opportunity for fellows to supervise and assist junior residents with IV, Central and A line Insertions and with Airway Management. Fellows take no overnight call during their rotation.

Fellows gain experience in the management of important critical conditions in the pediatric critical care population such as respiratory and circulatory failure, septic shock, traumatic brain injury, metabolic emergencies and poisoning. They also learn about fluid management and transfusion practices, ventilation and weaning techniques, and enteral and parenteral nutrition techniques in children. The fellows do have the opportunity to participate in the inter-hospital transport service which is run by the PICU team in our hospital.

Fellows participate in daily PICU conferences and have an opportunity to highlight and discuss anesthesia relevant issues with the PICU team. The rotation gives an opportunity for our fellows to understand issues from the intensivist's point of view and also for the intensivist to understand the rationale behind certain practices we have adopted in the OR.

The Fellows experience during this rotation will be directed toward achieving certain goals and objectives. These are intended to assist the fellow in gaining an understanding of this very important subspecialty.

II. Pediatric Anesthesia Faculty

Rashed E. Durgham, MD	Chief, Pediatric Intensive Care Unit.
Carlos I. Duran, MD	Staff Pediatric Intensivist
Karen Fauman, MD	Staff Pediatric Intensivist

For complete up to date listing please visit:
http://www.floatinghospital.org/OurServices/CriticalCare_PICU/

III. Teaching Methodology

The ACGME has recognized six general competencies for resident and fellow education. These competencies are:

- Medical Knowledge (MK)
- Patient Care (PC)
- Interpersonal and Communication Skills (ICS)
- Professionalism (PROF)
- Practice Based Learning and Improvement (PBLI)
- Systems Based Practice (SBP)

Competency based education focuses on learner performance (learning outcomes) in reaching specific objectives (goals and objectives of the curriculum).

The Goals and Objectives of the rotation will be met utilizing the following methods:

- Didactic Activities: Core Lecture Series, Monday Grand rounds, Morbidity and Mortality Conferences, Monthly Journal Clubs , morning keyword and mini-topic sessions
- Pediatric ICU Conferences and Lectures
- PBLI and SBP Activities: (involvement in QA/QI, M&M conferences, Risk Management and Patient Safety Initiatives)
- Guided personal study
- Clinical Research Projects
- Simulation education

Recommended Texts, Reading Material and Electronic Resources:

- *“A Practical Approach to Pediatric Anesthesia”* by Robert Holzman and Thomas Mancuso is a very readable text that is recommended for our fellows.
- *“A Practice of Anesthesia for Infants and Children”* by Charles J. Cote, David Todres has been recently updated and is available in both print and online format. Copies can be borrowed from one of the pediatric faculty.
- *“Smith’s Anesthesia for Infants and Children”* by Peter J. Davis and Etsuro K. Motoyama (Elsevier 2011). Recently updated. Available in both print and online format.
- *“Clinical Anesthesia Procedures of the Massachusetts General Hospital”* by Peter Dunn and Keith Baker. The Pediatric Anesthesia and Neonatal Section give a good outline and is an easy read.
- Electronic Access via Tufts Health Sciences Library to multiple reference and research resources (OVID, Medline, MD Consult, Pediatric Anesthesia Journals etc.)

IV. Evaluation and Assessment Methods

Your clinical performance during the rotation will be assessed using a collection of assessment and evaluation tools to assure that the competency – set goals and objectives have been met. Constructive assessment and feedback will help you focus on areas which and skill sets which need attention so that you can improve in them. Assessment data also will help us improve our rotation and improve your educational experience. Competencies covered using each method are delineated in *italics* below

A. Focused Direct Observation and Feedback

During the rotation fellows will receive direct observation and feedback from the rotation's supervising faculty. This will include verbal feedback and a summative assessment at the end of the rotation.

All 6 competencies.

B. 360 ° Global Evaluations

These are evaluation by different members of the patient care team (Intensivists, Nursing Staff, Ancillary Staff etc.). Helps provide multiple perspectives of fellows' performance.

Professionalism, Interpersonal and Communication Skills, SBP

C. Participation in Didactic and Educational Activities

Core Lectures. Pediatric ICU Lectures and Conferences. X-Ray Rounds. Participation in Case Conferences and M&Ms

PBLI

Interpersonal and Communication Skills

Medical Knowledge

Patient Care

D. Rotation Evaluation by Fellows

Fellows do get an opportunity to evaluate the rotation at the completion of the rotation and more formally during the annual confidential program and faculty survey. The aim is for them to self-assess the successful achievement of rotation goals, and provide feedback to the program. This feedback is important for us to continue improving the rotation and address specific issues.

Practice Based Learning and improvement.

V. Goals and Learning Objectives

The detailed Goals and Learning Objectives of the Pediatric Intensive Care Unit Rotation for Pediatric Anesthesia Fellows are outlined below. The curriculum has been developed based on the new ACGME competency based education guidelines. The contents of the course curriculum have been compiled based course guidelines developed by the *ASA Committee on Pediatric Anesthesia*.

A. Medical Knowledge

1. Goals and Learning Objectives:

1. Define admission criteria for PICU
2. Learn principles of Pediatric Advanced Life Support (PALS)
3. Learn about peculiarities of fluid management and blood transfusion in children
4. Learn about pediatric enteral and parenteral nutrition
5. Learn about the pathophysiology and management of some common and important pediatric critical care disease processes and conditions
 - Congenital Heart Disease, including post-operative patients
 - Circulatory Shock
 - Sepsis and Septic Shock
 - Respiratory Failure
 - Status Asthmaticus
 - Traumatic Brain Injury
 - Diabetic Ketoacidosis
 - Status Epilepticus
 - Liver Transplantation
 - Renal Failure
 - Toxic Ingestions
 - Trauma

B. Patient Care

1. Goals:

1. Fellows must be able to provide anesthetic care that is compassionate, appropriate and effective. They should be able to communicate effectively with the care team.
2. They should demonstrate caring and respectful behavior with the team members, patients and their families.
3. They should be able to gather essential and accurate information about their patients and be able to formulate an anesthetic care plan.
4. They should be able to competently perform airway management and invasive anesthetic procedures.

2. Learning Objectives:

1. Complete history and physical and review any medical records that accompany the patient
2. Formulate a differential diagnosis and plan appropriate diagnostic and therapeutic interventions in coordination with the intensive care team
3. Obtain informed consent from a parent / guardian.
4. Through thoughtful review of diagnostic results and frequent reassessment of the patient, the fellow will reconsider the clinical status of the patient, along with the differential diagnoses on a continuing basis, making changes to management plans as appropriate. Fellows will be directly involved in decision-making regarding patient readiness for step-down of care.
5. As medically indicated, fellows will perform appropriate diagnostic and therapeutic procedures after obtaining informed consent from the patient and/or family, with supervision from the PICU staff. On this rotation, these may include:
 - Arterial puncture and arterial line placement
 - Venipuncture and intravenous catheter placement
 - Central line placement
 - Endotracheal intubation
 - Intravenous catheter placement
 - Thoracentesis and chest tube insertion
6. Recognize and initiate plan for circulatory shock and congestive cardiac failure
7. Understand rationale and need for invasive hemodynamic monitoring
8. Recognize respiratory failure and initiate rational care plan
9. Be able to differentiate and diagnose conditions causing changes in neurologic status
10. Understand and manage elevated ICP
11. Know how to initiate management of seizures
12. Appropriately choose and administer fluids to pediatric patients of all ages.
13. Estimate Blood Volume and be able to calculate allowable blood loss for children of all ages.

14. Using PALS, the fellow is able to preside over the resuscitation of a child in cardiac arrest, or with a life-threatening hemodynamic disturbance or arrhythmia.

C. Interpersonal and Communication Skills

1. Goals:

Fellows must be able to demonstrate interpersonal and communication skills that result in effective information exchange. They should be able to work effectively with others as a member or leader of a patient care team. They will learn how to effectively gather information using effective listening, explanatory, questioning and writing skills.

2. Learning Objectives:

15. Fellows will be able to establish a sustained and therapeutic and ethically sound relationship with the patient and his/her parents /family.
16. Will be able to effectively retrieve pertinent medical information from the patient, parents and patient care team members.
17. Obtain informed consent and clearly communicate the treatment options and risks with patient / parents.
18. Will coordinate care and work effectively with other patient care team members (surgeons, operating room and ICU nurses, child life specialists etc.)

D. Professionalism

1. Goals:

Fellows must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

2. Learning Objectives:

1. Fellow will demonstrate respect, compassion and integrity.
2. Fellow will demonstrate a commitment to ethical principles

3. Fellow will demonstrate sensitivity and responsiveness to the needs of parents and children.
4. Will demonstrate sensitivity towards patient's culture, gender and disabilities.
5. Fellow will demonstrate ability to manage conflict
6. Fellow will show commitment to excellence in the care of children and their families.
7. Fellow will demonstrate ongoing commitment towards professional development.

E. Practice Based Learning and Improvement

1. Goals:

Fellow must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

2. Learning Objectives:

1. Learn about the AAP and ASA Standards and Guidelines as pertinent to Pediatric Intensive Care Medicine. They will analyze and improve on their practices based on the guidelines and standards set forth by the professional societies.
2. Will be able to locate, appraise and assimilate evidence from peer reviewed scientific articles related to our subspecialty.
3. They will explore various ways to find information using information technology (e.g. PubMed, Ovid, MD Consult etc.). They will learn to use our institutions Patient Information System to effectively gather information.
4. They will be able to apply knowledge based on the appraised literature and strive to practice evidence based medicine.
5. They will take active part in departmental and institutional Quality Improvement and Risk Reduction projects.

F. Systems Based Practice

1. Goals:

Fellows must 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 effective safe care

2. Learning Objectives:

1. Fellows need to understand the functioning of the Pediatric Intensive Care Unit and understand how this services integrate with the rest of hospital services
2. Fellows will learn to promote patient safety and understand ways to reduce medical errors (e.g. ticket to safety initiative, drugs error prevention program etc.)
3. Fellows are expected to provide high quality, but cost-effective health care. They will collaborate with case managers and other team members to begin discharge planning before patients are transferred to the inpatient floor.
4. The fellow will communicate regularly with the patient's primary care physician, documenting these contacts in the medical record.
5. Fellow will become familiar with child care social services. Will learn to identify child abuse and communicate concerns with the wider health care team.

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