

Pediatric Regional Anesthesia Rotation

Boston Children's Hospital

ROTATION DIRECTOR:

David B. Waisel, MD

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I. Rotation Overview

Children's Hospital Boston is one of the largest and most prestigious pediatric medical centers in the US. The Division of Pediatric Regional Anesthesia offers excellent multidisciplinary training in advanced regional anesthesia techniques in the pediatric population. During their 2-week rotation, our fellows will get exposed to basic and advanced regional techniques and procedures to manage postoperative pain in neonates, infants and children.

During their rotation our Pediatric Anesthesia Fellows will function under the direct supervision and guidance of the assigned Regional Attending.

The fellowship director will receive a summative assessment at the end of the 2-week rotation.

II. Pediatric Regional Anesthesia Service Faculty

David Waisel, MD – Fellowship Director, Regional Anesthesia Fellowship

Roland Brusseau, MD, Director of Regional Anesthesia Service

Walid Alrayashi, MD

Karen Boretsky, MD

Elena Brusseau, MD

Elizabeth Eastburn, DO

Andrea Gomez Morad, MD

Stephen Kelleher, MD

Anjali Koka, MD

Cornelius Sullivan, MD

FOR COMPLETE UPDATED FACULTY LISTING PLEASE REFER TO THE WEBSITE OF THE DEPARTMENT OF ANESTHESIOLOGY, CRITICAL CARE, AND PAIN MEDICINE AT THE BOSTON CHILDREN'S HOSPITAL.

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: Regional Anesthesia Core Lecture Series, Case Conference, and Department Grand Rounds
- Morning report
- Guided personal study

Recommended Texts, Reading Material and Electronic Resources:

- *“A Practical Approach to Pediatric Anesthesia”* by Robert Holzman and Thomas Mancuso
- *“A Practice of Anesthesia for Infants and Children”* by Charles J. Cote, David Todres.
- *“Smith’s Anesthesia for Infants and Children”* by Peter J. Davis and Etsuro K. Motoyama
- Regional Anesthesia Guidelines for Pediatric Patients on NYSORA
- The New York School of Regional Anesthesia Textbook of Regional Anesthesia and Acute Pain Management
- Brown’s Atlas of Regional Anesthesia
- Electronic Access via Tufts Health Sciences Library to multiple reference and research resources (OVID, Medline, MD Consult, Pediatric Anesthesia Journals etc.)
- Computer based learning through TUSK (Tufts University Knowledge Database)
- Pediatric Anesthesia Sections from Major Anesthesia Texts (Miller, Barash 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 written assessments at the end of the rotation.

All 6 competencies.

B. 360 ° Global Evaluations

These are evaluation by different members of the patient care team (Surgeons, Nurse Practitioners, Nursing Staff, and Ancillary Staff etc.). Helps provide multiple perspectives of fellow's performance.

Professionalism, Interpersonal and Communication Skills, SBP

C. Participation in Didactic and Educational Activities

Core Lectures, Participation in Case Conferences and M&Ms

PBLI

Interpersonal and Communication Skills

Medical Knowledge

Patient Care

D. Rotation Evaluations 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 Regional Rotation for our Pediatric Anesthesia Fellows are outlined below. The curriculum has been developed based on the ACGME competency-based education guidelines. The contents of the course curriculum have been compiled based on the Course Guidelines developed by the *ASA Committee on Pediatric Anesthesia* and the *ABA Pediatric Anesthesia Certification Exam Content Outline*.

Given the short duration of this rotation, we do not expect the fellow to achieve complete mastery over regional anesthesia techniques in the pediatric population. The primary aim is providing them with an overview of basic principles with regard to indications, contraindications, risks, benefits and informed consent. We expect the fellow to get familiar with available tools like advanced US, and learn proper clinical technique. It is also very important that the fellow understands the main anatomical, physiological, pharmacological and psychological differences between infants, children and adults.

A. Medical Knowledge

1. Goals and Learning Objectives:

1. Learn key differences between children and adults most importantly in relation to anatomy, physiology, pharmacology, and psychology
2. Describe the importance of control of acute postoperative pain in pediatric patients
 - a. Psychological issues
 - b. Physiological issues with special emphasis on the stress response
3. Describe options for age appropriate sedation of patients for placement of peripheral nerve blockage
4. Describe and compare commonly used peripheral nerve blocks and note specific pediatric nuances
 - a. For the lower extremity
 - b. For the upper extremity
 - c. For abdominal and thoracic surgery
5. List general attributes of local anesthetic pharmacology in pediatric patients
6. Describe specific clinical attributes of various local anesthetics including onset, duration, motor/sensory differential, toxicity and treatment in pediatric patients
7. Discuss the pharmacology, application and routes of administration of different classifications of drugs used as part of the multimodal approach for control of acute pain in pediatric patients
 - a. Anti-inflammatory agents
 - b. Ion channel stabilizers
 - c. NMDA receptor blockers
 - d. Alpha 2 agonists
8. Learn fluoroscopic imaging and radiation safety
9. Be familiar with current literature concepts related to regional anesthesia and outcomes as relevant to pediatric patients

B. Patient Care

1. Goals and Learning Objectives:

1. Fellows must provide care that is compassionate, appropriate and effective.
2. They should be able to communicate effectively with the care team.
3. They should demonstrate caring and respectful behavior with the team members, patients and their families.
4. Identify the main aspects of the history and physical examination relevant to the appropriate postoperative pain intervention for neonates, infants and children undergoing surgery in the critical care, inpatient and ambulatory setting. Special attention will be paid to how pediatric patients differ from adult patients in the perioperative setting.
 - a. Evaluate and document whether the patient may benefit from opioid, anti-inflammatory or other multimodal intervention and provide complete documentation
 - b. Evaluate and document whether the patient may benefit from regional anesthesia technique
 - c. Obtain relevant past medical history, including previous acute and chronic pain management, prior exposure to opioid and other pain medications and relevant coexisting disease
 - d. Evaluate concerns and anxiety levels of patient and family members
5. Discuss with patients and their parents and guardian
 - e. Post-operative acute pain requirement
 - f. Risks and benefits of regional techniques
 - g. Options for anxiolysis
 - h. Desirable patient outcomes
6. Obtain informed consent
7. Properly perform and teach correct technique for peripheral nerve blockade
 - i. Demonstrate nerve localization using nerve stimulation
 - j. Demonstrate nerve localization using ultrasound
8. Follow patients postoperatively and adjust their pain medications/regional techniques to provide effective and safe pain relief under appropriate supervision
9. Properly prepare to manage rare but serious complications of regional anesthesia

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:

1. Fellow will be able to establish a sustained and therapeutic and ethically sound relationship with the parents and/or health care proxy.
2. Will be able to effectively retrieve pertinent medical information from the parents and patient care team members.
3. Obtain informed consent and clearly communicate the options and risks to the parents and families.
4. Will coordinate care and work effectively with other patient care team members

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. Fellows will demonstrate respect, compassion and integrity.
2. Fellows will demonstrate a commitment to ethical principles
3. Fellows will demonstrate sensitivity and responsiveness to the needs of parents.
4. Will demonstrate sensitivity towards patient's culture, gender and disabilities.
5. Fellows will demonstrate ability to manage conflict

E. Practice Based Learning and Improvement

1. Goals:

Fellows 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 Pain Management. They will learn to analyze and improve on their practices based on the guidelines and standards set forth by the ASA.
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. Understand the complex emotional atmosphere surrounding patients with acute and chronic pain.
2. Provide appropriate education to ensure parents or caregivers are well informed regarding pain management plans
3. Be aware of ethical issues faced by pain specialists as they balance

individual patient care requirements with limited global resources

4. Acknowledge the difficulties and decision-making involved in utilization and allocation of finite health care resources
5. 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.)
6. The Fellows will strive to use medical supplies and equipment in a cost effective manner. Will learn strategies to reduce wastage and minimize cost of care.

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