NAME OF ROTATION: Emergency and Acute Illness Experience II and III

COURSE DIRECTOR:
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LOCATION:
Children's Healthcare of Atlanta at Egleston
1405 Clifton Rd
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TRAINING LEVEL: PGY-2 and PGY-3

LENGTH OF ROTATION: 1 month

COURSE DESCRIPTION:

The second and third year resident will build upon their ability to manage patients with acute illnesses and injuries gained during their internship year. In addition to recognizing the clinical features and treating a wide range of acute conditions such as poisonings, physical and sexual abuse, acute psychiatric, behavioral, and psychosocial problems, residents will also supervise first year residents and medical students in the emergency room. Unlike the ER I experience, residents will gain a greater experience in managing a wide variety of subspecialty patients and treating them on an outpatient basis including but not limited to hematology/oncology, liver, kidney, and heart transplant patients. The second year emergency room experience is designed to provide the resident with greater autonomy, independence and supervisory responsibilities.

During the second year of training, the residents will participate in a month-long rotation in the Emergency Department at Children's Health Care of Atlanta (CHOA) at Egleston. CHOA is a private health care system, comprised of Egleston and Scottish Rite Children's Hospitals, which provide tertiary care service to critically ill patients, minor and major trauma, medical emergencies, and non-urgent patients ranging in age from newborn to 18 years of age.

As in Emergency Room I, residents will serve as the first point of contact for the patients and subsequently present their evaluation to the pediatric emergency medicine attending physicians. In addition, PGY-2 residents will supervise interns and medical students in pediatric clerkships during their patient care process. Upon coordinating with the attending physicians, the resident will write and follow up on all orders, lab work, x-ray readings, and procedures. Residents are expected to write all discharge orders and contact the primary care physician, either by phone or letter, pertaining to the diagnosis, treatment, and follow up plans to assure continuity of care. Residents are expected to consult with a wide variety of sub-specialists as

needed. Residents are also expected to provide patient and family education in a clear and culturally sensitive manner. By providing effective patient education, residents are expected to encourage health promotion, disease prevention strategies and the importance of continuity of care utilizing the primary care provider of choice.

Residents can be expected to average 1 patient per hour depending upon the time of year, patient load, and individual efficiency. Residents will be scheduled on either an 8, 9, or 10-hour evening or day shifts. A procedure log will be kept and completion of it will be required to complete the rotation.

GOALS, OBJECTIVES, AND CORE COMPETENCIES:

GOAL 1: Understand how to rapidly assess, resuscitate, and stabilize a critically ill or injured child in the Emergency Department.

Objective 1.1: The resident will be able to assess urgent patients and recognize respiratory failure and or shock, formulate a diagnosis, and assist in evaluating and stabilizing the child. (PL1).

Objective 1.2: The resident will be able to establish and manage airway for all pediatric patients that present to the ED including demonstrating proficiency in:

1. Bag-Valve-Mask ventilation (PL1)
2. nasal and oral airways (PL1)
3. Endotracheal intubation (PL1)
4. Mechanical ventilation (PL1-2)
5. Nasotracheal Intubation (PL2)
6. Emergency cricothyrotomy (PL3)

GOAL 2: Identify priorities for vascular access, establish access, and perform fluid resuscitation.

Objective 2.1: The resident will be able to demonstrate proficiency in cannulation of peripheral veins, intraosseous needle insertion, and umbilical vessel cannulation. (PL1).

Objective 2.2: The resident will be able to explain indications and describe the appropriate techniques for arterial access and central venous access. (PL1).

GOAL 3: Demonstrate proficiency at cardiopulmonary resuscitation.

Objective 3.1: The resident will obtain and maintain certification as a provider of Pediatric Advanced Life Support. (PL1).

Objective 3.2: The resident will be able to direct resuscitation efforts in mock codes and in actual emergency situations. (PL2).

Objective 3.3: The resident will demonstrate a comprehensive understanding of the pharmacology of the drugs used in resuscitation. (PL1-2).

GOAL 4: Understand how to use and interpret laboratory and imaging studies and perform commonly used diagnostic procedures in the emergency setting.

Objective 4.1: The resident will be able to explain the indications and limitations as well as interpret the results, in the context of the specific patient, the following laboratory studies (PL1-2):

1. CBC with differential, platelets, indices
2. Bacterial, viral, and fungal cultures and rapid screens
3. Serologic tests for infection such as monospot, VDRL, and hepatitis
4. Blood chemistries
5. Arterial, venous, and capillary blood gases
6. Renal function tests
7. Tests of hepatic function
8. Drug levels and toxic screens
9. Gram stain, wet mount
10. Urinalysis
11. CSF studies
12. Stool studies
13. Coagulation studies
14. Pregnancy test
15. Plain radiographs of chest, skull, extremity, bones, abdomen
16. Electrocardiogram
17. Screening audiogram/tympanogram
18. Vision screening

Objective 4.2: The resident will be able to proficiently perform the following common procedures (PL1):

1. ABC'S/CPR
2. ABG
3. Blood drawing techniques
4. Splinting
5. Cath urine
6. Dressing and burn care
7. Foleys Catheterization
8. Intravenous lines

9. Lumbar puncture
10. Slit-lamp (PL3)/flourescein staining
11. Wound care

GOAL 5: Understand how to manage common illnesses and injuries presenting in an emergency room.

Objective 5.1: The resident will demonstrate an understanding of the pathophysiology, presenting signs and symptoms, differential diagnosis, treatment, and typical hospital course of the following conditions:

1. Allergy/Immunology including asthma (PL1-2), anaphylaxis, angioedema, serum sickness, and acute illnesses in the immunocompromised child (PL1-2).
2. Cardiovascular diseases including HTN, CHF, percarditis, dysrhythmias, shock, Kawasaki's disease, and acute illnesses of a patient with congenital heart disease (PL1-2).
3. Dermatology conditions including acute drug reactions, dermatitis, viral, bacterial, and fungal skin infections, scabies, and cutaneous manifestations of systemic diseases (PL1).
4. Endocrine disorders such as diabetes, SIADH, diabetes insipidus, infant presenting with an underlying inborn error of metabolism, and an acute illness in a child with an underlying endocrine disorder (PL1).
5. Surgical conditions pertaining to GI including management of the acute abdomen, peritonitis, bowel obstruction, ileus, appendicitis, malrotation, pyloric stenosis, intussusception, incarcerated hernia, GI reflux, inflammatory bowel disease, GI foreign body (PL1), and lower GI bleeding (PL2-3) .
6. Renal conditions such as acute renal failure, hematuria, proteinuria, urinary tract infection, phimosis, testicular torsion, epididymitis, STD (PL1), and acute illnesses in a child receiving dialysis or with a kidney transplant (PL2-3).
7. Gynecological conditions including dysfunctional vaginal bleeding, vaginal discharge, PID, and conditions of pregnancy such as intrauterine, ectopic pregnancy and threatened abortions (PL1).
8. Hematology and oncology issues such as sickle cell pain crisis, acute chest syndrome, fever in an immunocompromised child or child with sickle cell, hemophilia with acute trauma, and potential tumors as they present to the emergency room (PL1).
9. Common Infectious diseases like otitis media, pharyngitis, cervical adenitis, peritonsillar and retropharyngeal abscess, cellulites, sinusitis, meningitis,

encephalitis, sepsis, bacteremia, infected bites and wounds, and a fever without an obvious source (PL1).

10. Neurological conditions such as the child who presents with an altered mental status, headache, seizure, ataxia, or increased intracranial pressure (PL1-2).
11. Ophthalmologic conditions including corneal abrasions, conjunctivitis, ocular foreign bodies, and hyphema (PL1).
12. Otolaryngology conditions such as epitaxis, epiglottis, foreign body aspiration, and croup (PL1).
13. Respiratory conditions including pneumonia (PL1), respiratory failure (PL2), asthma (PL1), pneumothorax (PL2), bronchiolitis(PL1), BPD(PL1), SIDS(PL2), and acute illness in a child with an underlying respiratory disorder such as asthma and cystic fibrosis (PL1).
14. Trauma and potential surgical conditions such as burns, closed head injury (CHI), skull fractures, soft tissue trauma, and common dental injuries (PL1).
15. Toxins and environmental injuries such as bites, stings, electrical injury, heat and cold injury, ingestions and poisonings by an unknown substance, and ingestions of a common source such as iron, acetaminophen, cold medicines, cocaine, tricyclic antidepressants (PL1).
16. Psychiatric conditions including depression, attempted suicide, the combative patient, and panic attacks (PL1).
17. Social issues such as child abuse including physical, sexual, and verbal, rape, and substance abuse (PL2).

GOAL 6: Understand the application of monitoring, special technology, and treatment in the ED setting.

Objective 6.1: The resident will demonstrate a keen understanding of the indications, contraindications, and complications of the following techniques and treatment modalities (PL1 except where noted):

1. GI decontamination for poisoning
2. Administration of nebulized treatments
3. Wound care including suturing and splinting
4. Burn care
5. Oxygen delivering systems
6. Topical (PL1), local (PL1) and regional anesthesia (PL2)
7. Intubation
8. Recognition and management of pain

GOAL 7: Develop an efficient and logical approach to the care of emergency patients applying principles of decision-making and problem solving.

Objective 7.1: The resident will demonstrate the ability to prioritize patient care needs by using methods of triage, rapidly assessing varying levels of severity of illnesses to multiple patients, and providing timely diagnostic and therapeutic interventions (PL1).

Objective 7.2: The resident will develop an awareness of their own knowledge and skills and recognize when to ask for assistance (PL1).

Objective 7.3: The resident will consistently act responsibly and adhere to the professional standards for ethical and legal behavior (PL1).

Objective 7.4: The resident will become aware of quality control and quality improvement processes in the ED as a means to improve patient management (PL2).

Objective 7.5: The resident will demonstrate an understanding of how to function as part of an interdisciplinary team with all the members of the ED (e.g. nurses, clerical staff, financial workers, attending physicians, trauma tear, surgeons, respiratory therapists, and social workers) to improve comprehensive patient care (PL1).

Objective 7.6: The resident will maintain supervision of junior residents and medical students, and assist with didactic teaching and procedures for less experienced colleagues. (PL2).

Objective 7.7: The resident will demonstrate proficiency with directing a resuscitation team, and planning for resource prioritization in crisis situations (PL3).

GOAL 8: Understand how to provide sensitive and empathetic support to acutely ill patients and families.

Objective 8.1: The resident will be able to assist the families of injured and ill patients in a culturally sensitive and non-judgmental manner (PL1).

Objective 8.2: The resident will be able to identify risk factors in the child and family and intervene, offering referrals as needed (PL1).

Objective 8.3: The resident will demonstrate empathy and sensitivity in dealing with death and the dying patient (PL1).

Objective 8.4: The resident will be able to describe problems specific to indigent families in seeking acute care including the lack of a "true" medical home and barriers effecting compliance such as financial, language, transportation factors, and inadequate patient education pertaining to the severity of the diagnosis and the importance of treatment (PL2).

Objective 8.5: The resident will be able to identify specific strategies that potentially prevent or reduce morbidity for problems which frequently present to the emergency department (PL3).

GOAL 9: Understand key factors pertaining to cost control, billing, and reimbursement in the ED.

Objective 9.1: The resident will be able to select prescription medications with sensitivity to cost and practice appropriate utilization of consultants (PL1-2).

Objective 9.2: The resident will demonstrate sensitivity to the financial status of patients and refer to the appropriate agencies for assistance (PL1).

COMPETENCIES:

Competency 1: Patient Care. Provide family-centered patient care that is development- and age-appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

1.1: Use a logical and appropriate clinical approach to the care of emergency patients, applying principles of evidence-based decision-making and problem-solving, and demonstrating the ability to prioritize. Perform accurate ED triage.

1.1.1: Demonstrate the ability to multi-task by providing simultaneous care to multiple patients, with varying levels of acuity and severity of illness.

1.1.2: Use appropriate timing of diagnostic and therapeutic interventions.

1.1.3: Adjust pace to ED patient acuity, volume and flow.

1.2: Provide sensitive support to patients and families in the ED.

1.2.1: Provide sensitive support to critically ill patients and their families; arrange for ongoing support and/or preventive services if needed.

1.2.2: Be sensitive to the needs of families who use the ED for minor illness care (e.g., need for better orientation to the health care system, lack of community services or medical home).

Competency 2: Medical Knowledge. Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

2.1: Demonstrate a commitment to acquiring the base of knowledge needed for the care of children in the ED.

2.2: Demonstrate the ability to efficiently access medical information, evaluate it critically and apply it to pediatric care in the ED.

Competency 3: Interpersonal Skills and Communication. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

3.1: Provide effective patient education, including reassurance, for a condition(s) commonly seen in the ED.

3.2: Participate effectively as part of an interdisciplinary team in the ED to create and sustain information exchange, including communication with the primary care physician.

3.3: Provide case-based teaching related to clinical situations encountered in ED (for students, colleagues, other professionals and/or laypersons).

3.4: Maintain accurate, timely and legally appropriate medical records in the ED and urgent care settings.

Competency 4: Practice-based Learning and Improvement. Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

4.1: Use scientific methods and evidence to investigate, evaluate and improve one's patient care practice in the ED.

4.2: Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing acquisition of knowledge and skills.

Competency 5: Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

5.1: Demonstrate a commitment to professionalism despite the pace and stress of the ED setting.

5.2: Adhere to ethical and legal principles, and be sensitive to diversity.

5.2.1: Identify and describe potential ethical dilemmas that one may encounter in the ED (e.g., such as resuscitation of patients with little hope of recovery; treatment of disabled patients; providing confidential care to mature minors [pregnancy termination, STDs, substance abuse]; foregoing life-sustaining treatment; identifying and referring organ donors).

5.2.2: Discuss key principles and identify resources for information about legal issues of importance to practice in the ED (e.g., emergency care for indigent patients; laws regarding interhospital patient transfer; consent-to-treat issues in the emergency treatment of minors; rights of parents to refuse treatment and legal options of providers; reporting of child abuse and neglect; death reports; and obligations of physicians in the ED to facilitate follow-up care).

Competency 6: Systems-Based Practice. Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

6.1: Identify key aspects of health care systems, cost control, billing, and reimbursement as this relates to ED care and follow-up.

6.2: Demonstrate sensitivity to the costs of care in the ED setting and take steps to minimize costs without compromising quality.

6.3: Recognize and advocate for families who need assistance to deal with system complexities.

6.4: Recognize one's limits and those of the system; take steps to avoid medical errors.

PROCEDURES:

Technical and therapeutic procedures. Describe the following procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

- Abscess: I & D of superficial abscesses
- Abscess: aspiration
- Anesthesia/analgesia: conscious sedation
- Anesthesia/analgesia: digital blocks
- Anesthesia/analgesia: local/topical
- Anesthesia/analgesia: pain management
- Arterial puncture
- Arthrocentesis
- Bladder: catheterization
- Burn: management of 1st & 2nd degree
- Burn: acute stabilization of major burn
- Cardioversion/defibrillation
- Cervical spine immobilization
- Conjunctival swab
- Endotracheal intubation
- Endotracheal intubation: rapid sequence intubation
- Ear: cerumen removal
- Eye: contact lens removal
- Eye: irrigation
- Eye: eyelid eversion
- Eye: patch
- Eye: fluoroscein eye exam
- Foreign body removal (simple): nose
- Foreign body removal (simple): ear
- Foreign body removal (simple): conjunctiva
- Foreign body removal (simple): subcutaneous
- Foreign body removal (simple): vagina
- Gastric lavage
- Gastric tube placement (OG/NG)
- Gastrostomy tube replacement
- Gynecologic evaluation: postpubertal
- Immobilization techniques for common fractures & sprains
- Ingrown toe nail treatment
- Inguinal hernia: simple reduction
- Intravenous line placement

- Intraosseous line placement
- Lumbar puncture
- Medication delivery: endotracheal
- Medication delivery: IM/SC/ID
- Medication delivery: inhaled
- Medication delivery: IV
- Medication delivery: rectal
- Pulmonary function tests: peak flow meter
- Pulse oximeter: placement
- Rectal swab
- Reduction of nursemaid elbow
- Reduction/splinting of simple dislocation
- Sexual abuse: exam/evaluation
- Sterile technique
- Subungual hematoma: drainage
- Suctioning: nares
- Suctioning: oral pharynx
- Suctioning: trachea (newborn)
- Suctioning: tracheostomy
- Throat swab
- Tooth: temporary reinsertion
- Tracheostomy tube: replacement
- Urethral swab
- Vaginal lavage
- Venipuncture
- Ventilation: bag-valve-mask
- Ventilation support: initiation
- Wood's lamp examination of skin
- Wound care and suturing of lacerations

Diagnostic and screening procedures. Describe the following tests or procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

- ECG: emergency interpretation
- ECG: perform
- Monitoring interpretation: cardiac
- Monitoring interpretation: pulse oximetry
- Monitoring interpretation: respiratory
- Radiologic interpretation: abdominal ultrasound
- Radiologic interpretation: abdominal X-ray

- Radiologic interpretation: cervical spine X-ray
- Radiologic interpretation: chest X-ray
- Radiologic interpretation: CT of head
- Radiologic interpretation: extremity X-ray
- Radiologic interpretation: GI contrast study
- Radiologic interpretation: lateral neck X-ray
- Radiologic interpretation: skeletal X-ray (incl. abuse)
- Radiologic interpretation: skull film for fracture
- Radiologic interpretation: sinus films
- Vision screening

Source. Kittredge, D., Baldwin, C. D., Bar-on, M. E., Beach, P. S., Trimm, R. F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website. Available online: www.ambpeds.org/egweb. [Accessed 07/27/2009]. Project to develop this website was funded by the Josiah Macy, Jr. Foundation 2002-2005.

SCHEDULE:

Residents will be scheduled for approximately 18-20 shifts on either the AM or PM shifts. Residents will attend previously scheduled continuity clinics, weekly didactics, Grand if they are not scheduled for a shift and they are compliant with ACGME duty hours rules.

DIDACTIC SESSIONS:

A core set of lectures is given to the residents each month during weekly didactic lecture sessions on the 4th Monday. Topics include but are not limited to wound care, documentation, splinting, urologic emergencies, head trauma, and asthma.

EVALUATION:

The preceptor and resident will complete evaluation forms on the six core competencies via electronic evaluation form. Residents will complete a procedure log and return to ER administrative assistant Donna Stringfellow (office 404-785-7142, fax 404-785-7989, Email donna_stringfellow@oz.ped.emory.edu) at the completion of the rotation.

REFERENCES:

—Nelson's textbook of Pediatrics – 17th edition
—Textbook of Pediatric Emergency Medicine by Fleischer and Ludwig
—Synopsis of Pediatric Emergency Medicine by Fleischer and Ludwig