PEDIATRIC EMERGENCY MEDICINE
FELLOWSHIP CURRICULUM OBJECTIVES

Required rotations following a three-year pediatric residency:

1. Anesthesia
2. Orthopedics
3. Pediatric Critical Care
4. Radiology
5. Toxicology (Good Samaritan Regional Poison Center)
6. Research
7. Pediatric Emergency Medicine
8. Adult Emergency Medicine (Maricopa Medical Center)
9. Emergency Medical Services
10. Trauma

Required rotations following a three-year adult emergency medicine residency:

1. Anesthesia
2. Orthopedics
3. Pediatric Critical Care
4. Radiology
5. Toxicology (Good Samaritan Regional Poison Center)
6. Research
7. Pediatric Emergency Medicine
8. Neonatology
9. Pediatric Ward
10. Pediatric Clinic

Note the substitution of 8, 9, and 10 depending on the primary residency training. Each of these rotations will be one month in duration.
Elective rotations listed below will be each two weeks in duration and available for both emergency medicine and pediatric trained residents.

1. Child Abuse
2. Pediatric Surgery
3. Neurosurgery
4. Pediatric Ophthalmology
5. Pediatric Otolaryngology
6. Pediatric Urology
7. Neurology
8. Psychiatry
9. Adolescent Medicine
10. Cardiology
11. Endocrinology
12. Gastroenterology
13. Hematology/Oncology
14. Infectious Disease
15. Nephrology
16. Pulmonology
17. Pathology

The distribution of these rotations is summarized in the grids below:
GRID FOR SUBSPECIALITY RESIDENTS COMPLETING A THREE-YEAR PEDIATRIC RESIDENCY

<table>
<thead>
<tr>
<th>Rotations</th>
<th>1st YEAR</th>
<th>2nd YEAR</th>
<th>3rd YEAR</th>
</tr>
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<tbody>
<tr>
<td></td>
<td># Mths</td>
<td>Shifts/ mth</td>
<td>Total Hrs</td>
</tr>
<tr>
<td>Ped ER only</td>
<td>5</td>
<td>16</td>
<td>800</td>
</tr>
<tr>
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<td>6</td>
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<tr>
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<tr>
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<tr>
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<tr>
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<td>0</td>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
<tr>
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<tr>
<td>Peds ED Total shifts/hrs</td>
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<td>104</td>
<td>1040</td>
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- *Night call responsibilities will be 1:4 during these months
- *Adult ED months will follow a similar shift pattern to the pediatric ER but according to their schedule (averaging 16 shifts per month)
- All pediatric ER shifts will be 10 hours each, except during the third year, which will be eight hours.
- If vacation is taken during an elective, the number of shifts will be prorated accordingly.
## GRID FOR SUBSPECIALITY RESIDENTS COMPLETING A TWO-YEAR EMERGENCY MEDICINE RESIDENCY

<table>
<thead>
<tr>
<th>Rotations</th>
<th>1&lt;sup&gt;ST&lt;/sup&gt; YEAR</th>
<th>2&lt;sup&gt;ND&lt;/sup&gt; YEAR</th>
<th>1&lt;sup&gt;ST&lt;/sup&gt; YEAR</th>
<th>2&lt;sup&gt;ND&lt;/sup&gt; YEAR</th>
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<tbody>
<tr>
<td></td>
<td># Mths</td>
<td>Shifts/mth</td>
<td>Total Hrs</td>
<td># Mths</td>
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<td>Ped ER only</td>
<td>5</td>
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<tr>
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<td>Anesthesia</td>
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<tr>
<td>Trauma*</td>
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<td>Vacation</td>
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<tr>
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<tr>
<td>Pediatric Wards*</td>
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<tr>
<td>Neonatology</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total shifts/hrs</td>
<td>---</td>
<td>104</td>
<td><strong>1040</strong></td>
<td>---</td>
</tr>
</tbody>
</table>

- *Night call responsibilities will be 1:4-5 during these months
- *Adult ED months will follow a similar shift pattern to the pediatric ER but according to their schedule
- All pediatric ER shifts will be 10 hours each
- If vacation is taken during an elective, the number of shifts will be prorated accordingly
CURRICULUM OBJECTIVES FOR EACH ROTATION

ADMINISTRATIVE OBJECTIVES

Contact: Dave Bank, MD  
Director, Emergency Department  
Phoenix Children’s Hospital

1. Become familiar with JCAHO Quality Improvement requirements for emergency departments.
2. Learn billing guidelines and acquire accurate coding habits. In addition, the fellow should try to understand the reimbursement process as well as the differences between Medicaid and private plans and the impact they have on the provision of emergency services.
3. Attend all administrative meetings with the goal of understanding the role of a director and the accompanying responsibilities.
4. Identify an administrative project and bring some resolution to that issue during the rotation.
5. Become familiar with the EMTALA and HIPPA guidelines and what they mean for emergency medicine.
6. Spend at least one day with the risk management and/or hospital lawyers gaining insight into medical legal issues.

ADULT EMERGENCY MEDICINE

Contact: Paul Blackburn, DO  
Maricopa Medical Center

1. Become familiar with evaluation and stabilization protocols for chest pain and stroke.
2. Learn to diagnose and treat common adult emergency conditions.
3. Practice pelvic exams for PID diagnosis as well as obstetric indications.
4. Learn to become a nurturing advisor to adult ER physicians treating pediatric patients.
5. Obtain ACLS certification (may be accomplished anytime during the three-year fellowship).
6. Become familiar with typical adult doses of antibiotics, sedatives and resuscitation medications.
ANESTHESIA

Contact: Casey Lenox, MD  
Anesthesia Department  
Phoenix Children’s Hospital

2. Perfect bag-valve-mask ventilation technique.
3. Become familiar with rapid sequence induction in different scenarios (head trauma, hypotension, asthma etc.)
4. Learn the onset, duration, indications and side effects of all sedation drugs as well as paralytic agents.
5. Practice intravenous cannula insertion.
6. Review the entire sedation protocol for Phoenix Children’s Hospital.

adolescent medicine

Contact: Chantay Banikarim MD, MPH  
Adolescent Medicine  
St. Joseph’s Hospital, Phoenix

1. Become comfortable with pelvic exams at different ages.
2. Learn the diagnostic criteria and treatment options of pelvic inflammatory disease.
3. Learn to manage patients with psychosocial problems presenting to the emergency room.
4. Recognize and treat emergencies in eating disorder patients.

cardiology

Contact: John Stock, MD  
Pediatric Cardiology  
Phoenix Children’s Hospital

1. Gain competency in the interpretation of pediatric and adult EKG’s.
2. Become familiar with the evaluation of cardiac murmurs.
3. Learn the diagnosis and treatment of cardiac problems (CHF, rheumatic fever, infective endocarditis, SVT, syncope)
4. Become familiar with the names of the different cardiac repairs and stages of procedures and their effect on cardiac flow.
**CHILD ABUSE**

Contact: Stephanie Zimmerman, MD  
Emergency Department  
Phoenix Children's Hospital

1. Become familiar with the entire process of evaluation of alleged physical and sexual abuse.  
2. Perform at least four physical and four sexual abuse evaluations.  
3. An abbreviated one week course can be done instead with a minimum of two physical and two sexual abuse evaluations.  
4. Become familiar with colposcopic exams.  
5. Become familiar with the limitations and benefits of Child Protective Services in these cases.

**CRITICAL CARE**

Contact: David Beyda, MD  
Chief, Pediatric Critical Care  
Phoenix Children’s Hospital

1. Acquire skills for central line and arterial line placement including transducer setup.  
2. Become familiar with the parameters for cardiopulmonary monitoring.  
3. Become familiar with all vasoactive drugs, their dose ranges, indications and side effects.  
4. Review the critical care management of common pediatric emergencies (DKA, sepsis, head trauma, respiratory failure, shock etc.).  
5. Become familiar with the principles of mechanical ventilation.

**DERMATOLOGY**

Contact: Ron Hansen, MD  
Dermatology  
Phoenix Children’s Hospital

1. Become familiar with the different terms used to describe skin lesions.  
2. Learn the emergency skin conditions, their presentation and treatment.  
3. Review the dermatologic manifestations of systemic disease.
**ENDOCRINOLOGY**

Contact: Khalid Hasan, MD  
Endocrinology  
Phoenix Children’s Hospital

1. Become familiar with the management of diabetic emergencies (DKA, hyperglycemia, hypoglycemia).
2. Review the workup for unexpected hypoglycemia.
3. Learn the emergency care of adrenal crises.

**EMERGENCY MEDICAL SERVICES**

Contact: John Gallagher, MD  
Medical Director, EMS  
City of Phoenix

1. Become familiar with the organization of EMS services for the City of Phoenix.
2. Learn the roles of different provider levels (EMT, paramedic, physician).
3. Review all existing EMS protocols.
4. Review prehospital disaster plans.
5. Understand the role of dispatch and on-line medical direction.
6. Time will be split between administration, “ride-alongs” and dispatch.

**GASTROENTEROLOGY**

Contact: Mitchell Shub, MD  
Gastroenterology  
Phoenix Children’s Hospital

1. Become familiar with Microvillus inclusion disease and it’s implications due to the high prevalence among American Indians.
2. Review the etiology and management of upper and lower GI bleeding.
3. Practice replacing gastrostomy tubes.
4. Learn the initial workup of malabsorption syndromes.
5. Become familiar with the care of liver transplant and biliary atresia patients.
HEMATOLOGY/ONCOLOGY

Contact: Michael Etzl, MD
Hematology/Oncology
Phoenix Children’s Hospital

1. Learn the workup for suspected cancer (leukemias, lymphoma and solid tumors)
2. Become familiar with the diagnosis and treatment of oncologic emergencies.
3. Become familiar with the management of complications of sickle cell disease.
4. Learn the fever/neutropenia protocol.
5. Learn the initial care and workup for patients with stroke and unexplained anemia.
6. Become familiar with the post-op care of bone marrow transplant patients.

INFECTIOUS DISEASE

Contact: Mark Rudinsky, MD
Infectious Disease
Phoenix Children’s Hospital

1. Become familiar with the current patterns of bacterial antibiotic resistance.
2. Review the management of common infectious disease problems listed below:
   a. Infective endocarditis
   b. Kawasaki’s disease
   c. Rheumatic fever
   d. Central line sepsis
   e. Fever of unknown origin
   f. Tuberculosis
   g. Cat Scratch Disease

NEONATOLOGY

Contact: Mark Shwer, MD
Neonatology
Phoenix Children’s Hospital

1. Become competent with neonatal intubation/ventilation.
2. Become familiar with the consequences of prematurity and what they mean for emergency room care (BPD, hydrocephalus etc.)
3. Become familiar with the normal patterns of healthy newborns.
4. Learn the infectious risks and their management in newborns.
**NEPHROLOGY**

Contact: Mark Joseph, MD  
Nephrology  
Phoenix Children’s Hospital

1. Learn the diagnosis, treatment and complications of urinary tract infections.
2. Become familiar with the emergency room management of:  
   a. Hypertensive crises  
   b. Acute glomerulonephritis  
   c. Renal failure, acute and chronic  
   d. Renal transplant patients  
3. Learn the workup for hematuria.  
4. Become familiar with the diagnosis and management of renal calculi.

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**NEUROLOGY**

Contact: Allen Kaplan, MD  
Neurology  
Phoenix Children’s Hospital

1. Be able to perform a thorough neurological exam of a child  
2. Become able to manage:  
   a. New Onset Seizures  
   b. Status epilepticus  
   c. Altered mental status  
   d. Headache  
   e. Pseudotumor cerebri  
   f. Ataxia  
   g. Weakness  
   h. Stroke  
   i. Encephalitis/ Meningitis

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**NEUROSURGERY**

Contact: Kim Manwaring, MD  
Neurosurgery  
Phoenix Children’s Hospital

1. Be able to recognize and treat increased intracranial pressure.  
2. Become familiar with shunts and their complications.  
3. Gain experience in reading CT’s, shunt series, cervical spine and skull films.  
4. Become familiar with the management of cervical spine and spinal cord injury.  
5. Learn the management of the different types of intracranial hemorrhage.
**OPHTHALMOLOGY**

**Contact:**  Amy Leverant, MD  
Ophthalmology

1. Become familiar with the approach to eye trauma problems as:
   a. Hyphema  
   b. Globe penetration  
   c. Corneal abrasion/ foreign bodies  
   d. Lid lacerations  
   e. Retinal hemorrhages  
2. Learn to manage common eye conditions as glaucoma, conjunctivitis, preseptal cellulitis and orbital cellulitis.  
3. Learn to use the slit lamp correctly.

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**OTOLARYNGOLOGY**

**Contact:**  John Raines, MD  
ENT  
Phoenix Children’s Hospital

1. Learn to efficiently remove foreign bodies from the ear, nose and esophagus.  
2. Learn the management of:
   a. Septal hematoma and nasal/ facial fractures.  
   b. Complications of otitis media (mastoiditis, cholesteatoma)  
   c. Complications of T &A.  
   d. Intraoral lacerations  
   e. Sinusitis and its complications.  
   f. Epistaxis  
   g. Tracheostomy problems.  
   h. Airway foreign bodies  
   i. Epiglottitis  
3. Become comfortable with the aspiration of peritonsillar abscesses.  
4. Practice using the head lamp and ENT instruments.
ORTHOPEDICS

Contact: Greg White, MD  
Louis Vu, MD  
Orthopedics  
Phoenix Children’s Hospital

2. Develop competency in performing a neurovascular exam of an injured extremity.  
3. Learn correct splinting position and technique.  
4. Be able to perform simple fracture reductions (distal forearm, phalangeal).  
5. Be able to perform simple reductions (Elbow, Shoulder, Fingers, Patella Radial head).  
6. Learn the management of common orthopedic problems:  
   a. Perthe’s disease  
   b. Slipped Capital Femoral Epiphysis  
   c. Osteomyelitis  
   d. Septic Arthritis and arthrocentesis  
   e. Partial finger tip amputation.

PSYCHIATRY

Contact: Eric Benjamin, MD  
Bio-behavioral Unit  
Phoenix Children’s Hospital

1. Become familiar with the approach to acute psychotic events.  
2. Recognize and accurately triage the suicidal patient.  
3. Be able to recognize depression, psychoses and eating disorders among adolescent patients and refer appropriately.  
4. Learn the policies regarding the use of patient restraints in the ER.

PULMONOLOGY

Contact: Paul Stillwell, MD  
Pulmonology  
Phoenix Children’s Hospital

1. Become familiar with all the various options in the care of status asthmaticus.  
2. Learn the emergency complications of cystic fibrosis and their management.  
3. Become familiar with PFT’s and peak flow use.  
4. Learn the various modes of ventilation and their application in the ER.
**RADIOLOGY**

**Contact:** Carrie Schaefer, MD  
Radiology  
Phoenix Children’s Hospital

1. Learn the indications for various radiological studies (plain films, fluoroscopy, ultrasound, CT and MRI).
2. Become competent in plain film interpretation.
3. Improve abilities with CT interpretations.
4. Review teaching files of common ER diagnosis.
5. Learn the limitations of various studies in foreign body location.

**SURGERY**

**Contact:** David Nortica, MD  
Pediatric Surgery  
Phoenix Children’s Hospital

1. Review the diagnosis and treatment of common surgical problems:  
   a. Appendicitis  
   b. Incarcerated hernia  
   c. Appendicitis  
   d. Pyloric stenosis  
   e. Malrotation/ Volvulus  
   f. Burns  
2. Become competent in replacing gastrostomy tubes, thoracostomy tubes and central lines.  

**TOXICOLOGY**

**Contact:** Paul Wax, MD  
Good Samaritan Regional Poison Center, Phoenix

1. Recognize acute toxidromes as well as the nonspecific effects of acute poisoning.  
2. Learn the stabilization of the acutely poisoned patient.  
3. Become familiar with the indications, contraindications and limitations of the use of charcoal, whole bowel irrigation, emetic agents and cathartics.  
4. Become familiar with the full range of functions of the Micromedex/ Poisindex systems.  
5. Learn the common childhood poisonings that will require aggressive therapy including admissions.
**TRAUMA**

**Contact:**  
Scott Petersen, MD  
Surgery  
St. Joseph’s Hospital, Phoenix

1. Complete the ATLS course  
2. Become an integral part of the response trauma team  
3. Learn the diagnostic and therapeutic approach to the major trauma patient including any existing standard protocols.  
4. Improve skills in the interpretation of abdominal and head CT scans.  
5. Become familiar with all trauma procedures such as:  
   a. Intubation with C-spine control  
   b. Chest tube insertion  
   c. Femoral vein cannulation and blood draws.  
   d. Hip and knee reductions following traumatic dislocation.  
6. Learn the timeline and flow of the trauma patient through the emergency department.

**UROLOGY**

**Contact:**  
Scott Berkman, MD  
Urology  
Phoenix Children’s Hospital

1. Become familiar with the clinical presentation, examination and diagnostic evaluation of patients with an acute scrotum.  
2. Become comfortable with the reduction of an incarcerated hernia in the ER.  
3. Learn the approach to the patient with genitourinary trauma.  
4. Become familiar with the different grades of renal reflux and their management.  
5. Become familiar with the management of acute urinary retention.  
6. Review the presentation, diagnosis and treatment of urinary calculi.