Pediatric Surgery

Length:	8 weeks of PGY-3 year
Location:	Kapiolani Medical Center for Women & Children
Primary Supervisor:	Walton Shim, M.D.
Academic Staff:	Sydney Johnson, M.D.; Devin Puapong, M.D.; Russell Woo, M.D.
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Pediatric Surgery considers the entire growing organism, from conception through adolescence, and emphasizes the commonality of immaturity on all organ systems rather than emphasizing care according to systems or regions. A large focus is on the care of the neonate, whose heat-loss propensity, limited ventilatory and cardiac reserves, poorly developed immune system, and inability to communicate are just as important as its disease. An example of this is seen in gastroschisis and diaphragmatic hernia, where the neonate's core temperature and limited pulmonary reserve loom large as predictors of success.

There are lesions, such as esophageal atresia and imperforate anus that are seen only in infancy and if not successfully treated do not allow the patient to be treated later in life by surgeons treating only adults. In later childhood, there are age-specific diseases such as intussusception, pyloric stenosis and foreign body ingestion and aspirations that must be appreciated and treated by surgeons in training.

Residents should be able to recognize and treat common conditions of the groin such as hernias, hydroceles, testicular maldescent and torsion. Childhood lesions of the neck such as thyroglossal duct cysts, lymphadenopathy, and branchial cleft cysts are common conditions with which Residents should be familiar. New strategies for treatment of common conditions such as diagnostic laparoscopy in the treatment of childhood hernias and laparoscopic orchiopexy and video-assisted thoracoscopy are examples.

The application of minimally invasive surgical procedures has advanced more slowly in pediatric surgery than in adult surgery, but promises to become much more important as technology develops smaller and more accurate instruments.

Finally, there is the delicate surgical technique inherent in the care of neonates and small children that must be learned by all who care for them.

An emphasis on pre-operative evaluations in the office/clinic setting is a large part of the program as well as office follow-up in the post-operative setting.

The Resident will be exposed to the more common neoplasms of childhood and the evolving strategies and multi-disciplinary approach to their care.

Goals

Upon completion of the Pediatric Surgery rotation, the Resident will be able to:

1. Demonstrate an understanding of the diagnosis and treatment of common surgical problems seen in childhood, such as abdominal pain, and masses of the groin, scrotum, and neck.
2. Understand the general care of the small growing infant, considering fluid requirements, ventilation, nutritional and drug needs.
3. Understand basic physiologic differences germane to the pediatric surgical patient, specifically fluid and electrolyte requirements, normal vital signs, normal blood volume, and normal urine output.
4. Understand the embryological and genetic origins of some of the more common birth defects such as Hirschsprung's Disease, the VACTERL Syndrome, Malrotation, and Intestinal Atresia.

Objectives

Medical Knowledge

1. Demonstrate knowledge of the more common surgical disorders of the newborn and the child.
2. Demonstrate knowledge of the more common childhood tumors, such as Wilm's tumor, neuroblastoma, and lymphoma, including a basic understanding of workup, staging, and underlying molecular genetic mechanisms.
3. Know the principles of neonatal diagnosis and surgical care in conditions such as necrotizing enterocolitis, congenital diaphragmatic hernia, patent ductus arteriosus, the acute scrotum, intestinal obstruction and malrotation in the newborn, atresia of the esophagus and anus, and abdominal wall defects.
4. Understand the presentation of various neonatal emergencies, and the associated anomalies which require further evaluation prior to surgery.
5. Demonstrate understanding of basic physiologic differences germane to the pediatric surgical patient, specifically fluid and electrolyte requirements, unique nutritional requirements, normal vital signs, normal blood volume, and normal urine output in the context of age.

Patient Care

1. Write fluid, electrolyte, drug, and nutritional orders commensurate with the child's age.
2. Take a good history, examine a child with abdominal pain, and demonstrate principles of orderly work-up with progressively more complicated and extensive tests, leading ultimately to a correct diagnosis and proper treatment.
3. Competently examine the groin of a child to distinguish hernias, hydroceles, tumors, torsion, and inflammation.

4. Demonstrate the ability to diagnose and care for the acutely ill child in the emergency room, paying particular attention to parental involvement and interaction with the child, who usually has limited communication capabilities.
5. Perform careful, atraumatic and efficient tissue handling, including proper suture and instrument use.
6. Effectively sedate the conscious child as part of treating minor surgical problems.
7. Demonstrate capability to care for the pediatric severely injured trauma patient.

Professionalism

1. Interact with Pediatric Surgeons, Anesthesiologists, Nurse Anesthetists, Pediatric Nurses, Ancillary staff, and Operating Room personnel in a respectful and professional manner.
2. Interact with Pediatricians, Subspecialists, and other Consultants in a respectful and professional manner.
3. Demonstrate sensitivity, respect, and adherence to ethical principles when interacting with patients and their families.

Systems-based Practice

1. Understand the multidisciplinary role of the Pediatric Surgeon, Pediatricians, Subspecialty Physicians and Consultants, Pediatric Nurses, the Operating Room Team, and Ancillary staff in the provision of safe, efficient, coordinated, and high quality care for the pediatric patient.
2. Demonstrate an understanding of the importance of delivery of cost-effective health care (diagnostic evaluation, therapy) and the importance of coordination in facilitating discharge planning.

Practice-based Learning and Improvement

1. Recognize and take responsibility for conditions commensurate with their training level and seek help and advice on problems with which they have little familiarity.
2. Demonstrate ability to utilize scientific studies to provide high quality pediatric surgical care.
3. Appropriately utilize Hospital information technology systems to manage patient care, and to access on-line medical information to provide high quality care.
4. Facilitate the learning of Medical and Nursing students.

Interpersonal and Communication Skills

1. Demonstrate skill in effective information exchange with patients, their families, and other members of the Pediatric Surgery Team.
2. Demonstrate ability for accurate and timely information exchange between other members of the Pediatric Surgery Team, both verbally and in writing, with appropriate use of the medical record.

Implementation

This rotation consists of 8 weeks at Kapiolani Medical Center for Women and Children during the PGY-3 year of Residency training. Residents will share equally in the care of patients assigned to and by Drs. Walton Shim and Sydney Johnson as preceptors in the operating room and clinics. Residents will be given cases proportionate to their ability and willingness to assume responsibility for both pre- and postoperative care. Particular attention will be paid to those activities in patient care that should need no prompting, such as performance of indicated rectal examinations, keeping preceptors informed of important status changes, daily patient contact documentation, timely familiarity with test results, and systematic, careful patient examination.

Residents will be carefully observed in the operating room and their recording of patient contacts will be evaluated. Residents will be judged on their ability to learn, change, and assimilate.

Residents will be encouraged to evaluate requests for some of the simpler surgical consultations and discuss diagnosis, further tests required, and treatment with the Attending Faculty member. Residents will be evaluated on promptness, availability, background reading, and evidence of prospective planning (i.e., the downstream effect of actions taken and the ability to foresee possible outcomes). An important aspect of this rotation will be the proper use of surgical technique and case presentation.

Required Readings

Residents will be expected to read about commonly encountered surgical problems and be guided by both anticipated and actual cases in the Pediatric Surgery rotation. In addition to diseases, Residents should read about appropriate and relevant basic science principles, and physiologic fundamentals of pediatric surgery, such as embryology, pathology, and temperature regulation.

Performance Measures and Competency Assessment

The guiding principle in Resident evaluation will be to develop the ability to assume a leadership role in patient care, moving toward an autonomy of action in formulating correct and reasonable treatment plans without exposing the patient to the dangers of ineptitude and inexperience.

Residents will be evaluated on a daily basis by their Faculty preceptors. Particular attention will be paid to performance in the operating room in the capacities of both assistant and primary surgeon. The Resident's mind will be probed for evidence of background reading and systematic, thoughtful evaluation.

1. Daily interactions with Attending Faculty on patient wards, in the Clinic, and in the Operating Room, with Focused Review.
2. Global Evaluation at the end of the rotation.

Other

The General Surgery Residency Program Office will contact the appropriate Kapiolani Medical Center personnel to issue the call room key, parking, meal instructions, medical transcription code, Rx code, Internet access code, and CareLink code (electronic order entry system and inpatient medical record).