

**Pediatric Surgery Residency Program**  
**Division of General and Thoracic Surgery**  
**Hospital for Sick Children**  
**Year 1**

**Goals and Objectives**

Revised June 13 2010

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**GOALS**

To develop the skills necessary to assume complete responsibility for the pre-operative, operative, and post operative management of the problems of the pediatric general surgical patient, to interact appropriately with allied colleagues in the care of the pediatric general surgical patient, to interact effectively with the pediatric general surgical patient and his/her family and to maintain the leadership and direction of the profession of pediatric general surgery.

**OBJECTIVES**

The Pediatric Surgery trainee upon completion of Year 1, relative to the following headings, should be able to....

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**MEDICAL EXPERT**

1. Develop the following clinical skills given a patient with a Pediatric General Surgical disease:
  - Take a relevant history.
  - Perform an acceptable physical examination concentrating on the relevant areas.
  - Arrive at an appropriate differential diagnosis.
  - Order appropriate laboratory, radiological and other diagnostic procedures, demonstrating an ability to interpret these investigations.
  - Arrive at an acceptable plan of management, demonstrating knowledge and skill in both the operative and non-operative treatment of the disease process.
  - Manage patients in the ambulatory setting, demonstrating a knowledge of office techniques and procedures.
  - If hospitalization is necessary, manage the patient throughout the entire in-hospital course, demonstrating appropriate knowledge and skills.
  - Provide a plan for patient follow-up.
  - Demonstrate efficiency in the utilization of health care resources.
  
2. Demonstrate a fundamental knowledge and understanding of the following general areas and disease processes within the field of Pediatric General Surgery, which is adequate to permit appropriate assessment, investigation, diagnosis, and treatment of these patients:
  - Common genitourinary problems – ovarian masses, foreskin problems, cryptorchidism, testicular torsion.
  - Soft tissue and skin infections – primary and secondary, antibiotic therapy, related surgical procedures.
  - Hernias – inguinal, umbilical, epigastric.
  - Common surgical problems in the emergency department – lacerations, burns, paronychia, subungual hematoma.
  - Common subcutaneous and soft tissue masses – lymphadenitis, lymphangioma, hemangioma, dermoid cyst, thyroglossal duct cyst, torticollis, branchial cleft cyst and fistula, lymphoma, breast lumps.

- Common problems of the endocrine system which may involve the surgeon – thyroid, parathyroid, hypoglycemia, adrenal hyperfunction, intersex conditions.
- The “Acute Abdomen” – acute appendicitis, acute gastroenteritis, bowel obstruction, intussusception, malrotation and volvulus.
- Disorders of the umbilicus – umbilical granuloma, umbilical discharge, omphalomesenteric and urachal anomalies.
- Hematemesis – post-emetic, gastritis and esophagitis, varices (esophageal and gastric), peptic ulcer disease.
- Rectal bleeding – fissure-in-ano, juvenile polyp, Meckel’s diverticulum, medical conditions that may cause rectal bleeding.
- Common anorectal problems – perianal abscess, fitula-in-ano
- Intestinal diseases in the older child – Crohn’s disease, ulcerative colitis, familial polyposis coli.
- The constipated child – functional megacolon, Hirschsprung disease, motility disorders.
- Non-bilious vomiting – pyloric stenosis, gastroesophageal reflux.
- The abdominal mass – Wilm’s tumour, neuroblastoma, others.
- Pediatric hepatobiliary and pancreatic disorders – gallstones, choledochal cyst, biliary atresia, inspissated bile syndrome, medical causes of jaundice, pancreatitis, pseudocyst.
- Common neonatal surgical conditions – neonatal intestinal obstruction, esophageal atresia and tracheoesophageal fistula, diaphragmatic hernia, omphalocele and gastroschisis, necrotizing enterocolitis, anorectal malformations, exstrophy.
- Disorders of the thorax – pneumothorax, empyema, pectus excavatum and carinatum, mediastinal masses, cystic adenomatoid malformation, sequestration, lobar emphysema.
- Trauma – general approach to the multiple-injured child, including initial treatment of hemorrhagic shock, management of specific organ injuries.
- Fluid and dietary management of the pediatric surgical patient – hemotherapy (blood, plasma, platelets), maintenance fluid regimens, replacement fluid regimens in specific conditions such as pyloric stenosis, small bowel obstruction, peritonitis, burns, TPN.
- Associated medical conditions which impact on the surgical patient – congenital heart disease, bronchopulmonary dysplasia, juvenile diabetes, immunodeficiency syndromes, etc.
- Indications for and complications of central venous lines in children
- Indications for and complications of gastrostomy and jejunostomy tubes in children.
- Management of the child undergoing liver or small intestinal transplantation.

3. Develop the following general skills over the first year of the training program (using a system of graded responsibility): to handle pediatric tissues gently and deliberately, to make reasoned intra-operative judgments, to contribute to a positive operating room atmosphere, and to demonstrate technical competence in performing the following procedures in children:

- Venous access, including insertion of tunneled central line, portacath, and PICC line.
- Incision and drainage of subcutaneous, soft tissue, or deep abscesses.
- Bronchoscopy, esophagogastrotomy, sigmoidoscopy.

- Excision of masses in the head and neck, including cystic hygroma, lymph node, branchial cleft remnant, thyroglossal duct remnant, dermoid cyst, and tumors.
- Thyroidectomy and parathyroidectomy.
- Repair of esophageal atresia with and without tracheoesophageal fistula, esophageal replacement, esophageal resection, repair of esophageal perforation.
- Pulmonary resection, including pneumonectomy, lobectomy, and wedge resection.
- Resection of extrapulmonary thoracic masses, including sequestration, bronchogenic cyst, mediastinal tumors and cysts, and thymectomy.
- Video-assisted thoracic surgery for empyema, biopsy or resection.
- Repair of pectus excavatum or carinatum, using either the Ravitch or Nuss techniques.
- Chest wall resection for tumor or infection.
- Biopsy and resection of breast mass.
- Placement of gastrostomy, jejunostomy, ileostomy, colostomy.
- Exploratory laparotomy for trauma, abdominal pain, or acute abdomen.
- Pyloromyotomy for pyloric stenosis.
- Repair of neonatal intestinal obstruction, including atresia, stenosis, web, congenital band, meconium ileus.
- Surgical management of necrotizing enterocolitis, including laparotomy, resection, stoma formation, strictureplasty, and bedside drainage.
- Closure of abdominal wall defects, including gastroschisis, omphalocele, and cloacal exstrophy.
- Open and laparoscopic appendectomy, fundoplication, splenectomy, cholecystectomy, adrenalectomy, Ladd procedure, bowel resection, and adhesiolysis.
- Open and laparoscopic management of ovarian torsion, cysts and tumors.
- Open and transanal pullthrough for Hirschsprung's disease.
- Posterior sagittal and laparoscopic pullthrough for high anorectal malformations, perineal procedures for low anorectal malformations.
- Restorative proctocolectomy for ulcerative colitis and familial polyposis, using open and laparoscopic techniques.
- Repair of umbilical, epigastric, and incisional hernia.
- Repair of inguinal hernia and hydrocele, orchidopexy, repair of testicular torsion, orchidectomy.
- Circumcision.
- Biopsy and resection of abdominal, thoracic, and soft tissue tumor, including Wilm's tumor, neuroblastoma, rhabdomyosarcoma, hepatoblastoma, lymphoma, and other tumors using open and laparoscopic techniques.
- Laparotomy (and laparoscopy) and cholangiogram for neonatal jaundice, Kasai portoenterostomy, resection choledochal cyst.
- Liver resection for trauma, infection, tumor, or transplantation.
- Pancreatectomy and pancreatic drainage procedures for trauma, pseudocyst, infection, tumor, or islet cell dysplasia.
- Recipient hepatectomy for patients undergoing a cadaveric or living-related liver transplantation

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## COMMUNICATOR

- Obtain and synthesize relevant history from patients, their families and the community.

- Demonstrate an appreciation of the unique relationship between pediatric patients and their families and be able to deal effectively and compassionately with family members by establishing therapeutic relationships.
- Demonstrate an appreciation of the unique psychological needs of pediatric patients.
- Listen effectively.
- Demonstrate effective communication skills.
- Maintain adequate written and dictated medical records.

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### **COLLABORATOR**

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.
- Effectively use the team approach in the management of complex patients, such as newborns with congenital anomalies and children with cancer, inflammatory bowel disease, or transplantation.

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### **MANAGER**

- Utilize resources effectively to balance patient care, learning needs, and outside activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently within each of the hospitals.
- Utilize health care technology to optimize patient care, life-long learning and other activities.
- Demonstrate an appreciation of the economic factors that influence decision-making and the impact of such factors on families.
- Understand the principles and practice of quality assurance and improvement.

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### **HEALTH CARE ADVOCATE**

- Identify the important determinants of health affecting patients, domestically and internationally.
- Demonstrate an understanding of injury prevention.
- Recognize and respond to those issues where advocacy is appropriate.
- Contribute to health-maintenance advocacy for children domestically and internationally including such areas as travel safety, helmet use, children operating machinery or motorized vehicles and accessibility to firearms.

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### **SCHOLAR**

- Complete at least one scholarly project (per year), including writing of research proposal, collection and analysis of data, writing/submission of abstract, presentation of abstract at a major meeting and submission of a manuscript for publication
- Develop, implement and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, housestaff / students and other health care professionals through formal and informal teaching opportunities.
- Contribute to the development of new knowledge to foster the academic growth of the specialty of general surgery by participating in scholarly work.

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### **PROFESSIONAL**

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with obligations of a physician.

- Demonstrate sensitivity to age, gender, culture and ethnicity in dealing with patients and their families.
  - Understand the ethical principles as related to the complex issue of congenital abnormalities and as applied to children submitted to medical treatment, research, etc.
  - Recognize the importance of maintenance of competence and evaluation of outcomes.
  - Understand the legal issues related to consent, confidentiality, and refusal of treatment.
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