

**General Surgery Residency Program**  
**PGY1 General Surgery Rotation**  
**Introduction**

On behalf of the Division of General Surgery, I wish to welcome you to the General Surgery service at The Hospital for Sick Children. For many, the rotation on our service is the first exposure to the care of the paediatric surgical patient. By the end of your stay, you should expect to have a comprehensive understanding of the common surgical problems unique to the paediatric age group, as well as a comfort level in dealing with sick children. Our mandate is also to impart knowledge and skill that will be relevant to the practice of adult general surgery: this will be especially true of the technical skills we teach. A few general guidelines deserve mention.

The surgical service is very demanding from many aspects. Unlike adult surgical services, you will find yourself dealing with parents as well as patients. It is important in your interactions to be guided by parental concerns, and questions with which you feel uncomfortable or unfamiliar should be referred to the senior resident or the appropriate attending. This is important, since vague or inconsistent answers only increase parental anxiety. A good rule of thumb is to seek help when in doubt. Our senior residents and staff expect to be told about problems as they arise. They are always willing to aid you in the appropriate management of the patients. Communication is a key ingredient to the smooth operation of our service.

Clinical signs tend to be much subtler in pediatric patients, especially neonates. For example, a 'dusky spell', a mild elevation in temperature, or slight peripheral mottling may well be the onset of life-threatening sepsis. Be vigilant in your approach to all the patients and cautious when ordering medications and IV's to ensure that the dosage or rate is appropriate to the size or age of the child.

There are learning opportunities in most of the activities the resident is exposed to. It is important to take advantage of as many of these as possible, particularly the clinic, the operating room, and the numerous teaching sessions (particularly those specifically geared to the junior residents). Although it is occasionally necessary, because of patient safety for service needs, to supersede educational opportunities this should be a rare occurrence.

We hope that your stay on the pediatric surgical service is rewarding. We look forward to working with you in the weeks ahead. Please feel free to come and talk to me if you have any concerns or difficulties during your time with us.

Georges Azzie, M.D.  
Program Director, General Surgery Service

***These Goals and Objectives are utilized in evaluation of Resident performance and will be reflected on the ITER.***

## EDUCATIONAL OBJECTIVES FOR GENERAL SURGERY RESIDENT ON THE PAEDIATRIC GENERAL SURGERY SERVICE

### General Aims

1. To become familiar with the recognition, natural history, and general and specific treatment of those paediatric surgical conditions that one would expect to encounter in a general surgical practice.
2. To understand the pathophysiology of paediatric surgical conditions, and the response of the child to surgery and trauma.
3. To learn to provide resuscitation and emergency treatment for the unstable child with complex surgical problems which require transport to a specialized centre for definitive treatment.
4. To become technically proficient with the operations used for children with common surgical conditions.
5. To learn the similarities and differences between the paediatric and adult approaches to common surgical conditions such as appendicitis, bowel obstruction, trauma, etc.
6. To achieve the range of other CANMeds competencies within the context of a pediatric environment.

### Specific Educational Objectives

#### Medical Expert

##### 1.Clinical Skills

Given a patient with a paediatric general surgical disease, the resident will be able to do the following to the satisfaction of his/her supervisor(s):

- a) Take a relevant history.
- b) Perform an acceptable physical exam concentrating on the relevant areas.
- c) Arrive at an appropriate differential diagnosis.
- d) Order appropriate laboratory, radiological and other diagnostic procedures, demonstrating knowledge in the interpretation of these investigations.
- e) Arrive at an acceptable plan of management, demonstrating knowledge in operative and non-operative treatment of the disease process.
- f) Manage patients in the ambulatory setting, demonstrating knowledge of common office techniques and procedures.
- g) Manage the patient throughout the entire in-hospital course, demonstrating knowledge of common office techniques and procedures.
- h) Provide a peri-operative plan for the patient, recognizing the unique anatomic, physiologic and psychosocial aspects in the paediatric population.
- i) Demonstrate competency with briefing, checklist and debriefing.

##### 2.Cognitive Knowledge

The resident will be expected to demonstrate a fundamental knowledge and understanding of the following general areas and disease processes. The resident's knowledge base must be adequate to permit appropriate assessment, investigation, diagnosis, and treatment. A series of eight formal presentations will be given over the rotation. They will cover many, but not all, of the following topics. We suggest that you read around the most common topics. The program director will be happy to supply you with user friendly material to read.

- a) Soft tissue infections - primary and secondary, antibiotic therapy, related surgical procedures.
- b) Hernias - inguinal, umbilical, epigastric.
- c) Common surgical problems in the emergency department - lacerations, skin abscesses
- d) The "Acute Abdomen" - acute appendicitis, acute gastroenteritis, bowel obstruction, intussusception, malrotation and volvulus.
- e) Common neck and other subcutaneous masses - lymphadenitis, lymphangioma, hemangioma, dermoid cyst, thyroglossal duct cyst, torticollis, branchial cleft cyst and fistula, lymphoma.
- f) Disorders of the umbilicus - umbilical granuloma, hernia, umbilical discharge.

- g) Hematemesis - Post-emetic, gastritis and esophagitis, varices (esophageal and gastric).
- h) Rectal bleeding - fissure-in-ano, juvenile polyp, Meckel's diverticulum, medical conditions that may cause rectal bleeding.
- i) Common anorectal problems - perianal abscess, fistula- in-ano
- j) The constipated child.
- k) Non-bilious vomiting - pyloric stenosis, gastroesophageal reflux.
- l) The abdominal mass - Wilms tumour, neuroblastoma, others
- m) Common neonatal surgical conditions - neonatal intestinal obstruction, esophageal atresia and T.E.F., diaphragmatic hernia, omphalocele & gastroschisis, necrotizing enterocolitis, imperforate anus, abdominal masses.
- n) Disorders of the thorax - pneumothorax, empyema, pectus excavatum, mediastinal masses, common lung lesions.
- o) Trauma - general approach to the multiply injured child, including initial treatment of hemorrhagic shock, management of specific organ injuries.
- p) 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.
- q) Indications for and complications of central venous lines in children.
- r) Hirschsprung's disease.
- s) Disorders of the liver and biliary tract -biliary atresia, choledochal cyst.

### 3. Technical Skills

During the rotation, the resident will assist in the operating room, and is expected to demonstrate the following abilities: to anticipate surgical maneuvers, to handle tissues gently, to make reasonable suggestions and ask intelligent questions, and to contribute to a positive operating room atmosphere. In general terms, the resident will be expected to demonstrate an understanding of the anatomy, indications, contraindications and conduct of the operation. The resident will also be expected to recognize aspects unique to Paediatric surgery, such as the more delicate issue and the smaller domain. In addition, by the end of the rotation, the resident will be expected to demonstrate technical competence in performing the following procedures to the satisfaction of his/her supervisors(s):

- a) Central venous cutdown in children.
- b) Tube thoracostomy.
- c) Reduction of an incarcerated inguinal hernia.
- d) Incision and drainage of subcutaneous abscess.
- e) Excision of simple skin or subcutaneous lesion.
- f) Appendectomy (laparoscopic and open).
- g) Laparoscopic cholecystectomy in a child.
- h) Repair of indirect inguinal hernia and communicating hydrocele in children greater than 2 years old.
- i) Repair of umbilical and epigastric hernia.
- j) Pyloromyotomy.
- k) Circumcision.
- l) Cervical lymph node biopsy.
- m) Other paediatric MAS (Minimal Access Surgery) diagnostic and therapeutic interventions.

**The optimal acquisition and development of technical skills will be achieved through a combination of simulation sessions, bedside procedures and formal operating room time. The residents who actively seek out mentorship and teaching are those who have been most satisfied with the rotation. You will reap what you sow.**

### Communicator

**By the end of the rotation the resident will be able to:**

- a) Obtain and synthesize relevant history from patients, their families and the community.
- b) Demonstrate an appreciation of the unique relationship between paediatric patients and their families, and be able to deal effectively and compassionately with family members by establishing therapeutic relationships.
- c) Demonstrate an appreciation of the unique psychological needs of paediatric patients.
- d) Listen effectively.
- e) Demonstrate effective communication skills.
- f) Maintain adequate written and dictated medical records, including Progress/Consultation/Clinic/Operative Notes and Discharge Summaries .

### Collaborator

**By the end of the rotation the resident will be able to:**

- a) Consult effectively with other physicians and health care professionals.
- b) Contribute effectively to other interdisciplinary team activities.
- c) 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.
- d) Work effectively and efficiently within the surgical team, as well as with other subspecialty teams.

### Manager

**By the end of the rotation the resident will be able to:**

- a) Utilize resources effectively to balance patient care, learning needs, and outside activities.
- b) Allocate finite health care resources wisely.
- c) Utilize health care technology to optimize patient care, life-long learning and other activities.
- d) Demonstrate an appreciation of the economic factors that influence decision making and the impact of such factors on families.
- e) Demonstrate an understanding of the principles and practice of quality assurance and improvement.
- f) Participate in the medication reconciliation program for inpatients.
- g) Demonstrate ability to prioritize and manage extremely ill, acute and non-acute patients

### Health Advocate

**By the end of the rotation the resident will be able to:**

- a) Identify the important determinants of health affecting paediatric patients.
- b) Demonstrate an understanding of injury prevention.
- c) Recognize and respond to those issues where advocacy is appropriate, including contacting Children's Aid as required.
- d) Contribute to health-maintenance advocacy for children, including such areas as use of breast milk, car seats, helmet use, children operating machinery or motorized vehicles, and accessibility to firearms.
- e) Be particularly cognizant of issues surrounding possible child abuse and acts on information obtained, if necessary.

### Scholar

**By the end of the rotation the resident will be able to:**

- a) Develop, implement and monitor a personal continuing education strategy.
- b) Critically appraise sources of medical information.
- c) Facilitate learning of patients, house staff / students and other health care professionals through formal and informal teaching opportunities. Particular to this rotation, you will work with residents from Paediatrics, and there will be ample opportunity to teach cognitive skills (related to specifics of surgical practice with which you will have much greater experience) and technical skills (related to procedures such as, but not limited to, chest tube insertion, management of drains, and basic suturing).
- d) Demonstrate insight into how new knowledge is developed (Note: Many residents have produced scholarly projects during or after their rotations, based on opportunities afforded while on the service. Faculty are happy to advise and support such projects. )

## **Professional**

### **By the end of the rotation the resident will be able to:**

- a) Deliver highest quality care with integrity, honesty and compassion.
- b) Exhibit appropriate personal and interpersonal professional behaviours.
- c) Demonstrate respect for medical code of conduct, as well as personal ethical conduct.
- d) Demonstrate sensitivity to age, gender, culture and ethnicity in dealing with patients and their families.
- e) Demonstrate an understanding of the ethical principles as related to the complex issue of congenital abnormalities and as applied to children submitted to medical treatment, research, etc.
- f) Recognize the importance of maintenance of competence and evaluation of outcomes.
- g) Demonstrate an understanding of the legal issues related to consent, confidentiality, and refusal of treatment. Recognize challenges specific to informed consent in children, and appreciate the increasing impact of family centered care on this process of consent, while never losing sight of what health care providers may feel is in the best interest of the patient. While not unique to Paediatric Surgery, these elements and dilemmas will be more evident on this rotation.
- h) Provide thoughtful, accurate handover
- i) Demonstrate awareness of own limitations and seek advice when necessary.

## **Summary**

Our goal is to afford residents the best possible opportunity to develop the knowledge and the skills necessary to deliver surgical care to children. We strive to make this as relevant as possible to the adult general surgeon. This material is not only crucial for the care of children but much of the knowledge and many of the skills will be of equal import to your adult patients. We will assist you in any way we can...make of this rotation what you will....