

MCMASTER UNIVERSITY

GOALS AND OBJECTIVES FOR PEDIATRIC SURGERY TRAINING

These Goals and Objectives of training in Pediatric Surgery operationalize the national Objectives of Training within the context of the McMaster Pediatric Surgery training program. They provide a framework that builds on the competencies of a fully trained General Surgeon to develop into a Pediatric Surgeon who can assume complete responsibility for the preoperative, operative, and postoperative management of Pediatric Surgical problems. As important is the development of the skills and attitudes so they can interact appropriately with the patients, their families and with allied colleagues involved in the care of pediatric patients. These skills will be built in a graduated manner so that at the end of the two years the Resident in Pediatric Surgery will seamlessly take on the Most Responsible Physician role. Interwoven within these objectives will be those of an ethical and academic nature that will reflect the conscience of modern Pediatric Surgery and help shape its future. The summary objectives are to ensure that pediatric surgeons maintain the leadership and direction of the profession of Pediatric Surgery.

Different geographic locations place different demands on pediatric surgeons. However, some educational objectives are considered mandatory and basic to the practice of Pediatric Surgery and will be referred to as Primary Objectives. Certain other objectives are considered desirable and appropriate to include under the umbrella of Pediatric Surgery, but are dependent on the trainee's personal objectives or those of the environment in which the resident intends to work. These will be referred to as Secondary Objectives.

For both sets of objectives, comprehensive and thorough understanding of the subjects listed will be expected. This will include, where appropriate, embryology, anatomy, physiology, pathology, natural history (both pre- and postnatal), diagnosis and management.

Residents must demonstrate the knowledge, skills and attitudes relating to gender, culture and ethnicity pertinent to Pediatric General Surgery. In addition, all residents must similarly demonstrate an ability to incorporate gender, cultural and ethnic perspectives in research methodology, data presentation and analysis.

A - MEDICAL EXPERT/CLINICAL DECISION-MAKER

As a Medical expert, a resident in pediatric surgery at McMaster is expected to develop the skills to utilize all the CanMEDS roles to provide patient and family centered care.

In developing towards becoming a consultant in pediatric surgery resident must be able to perform a consultation. This will include both the presentation of an assessment and the recommendations for further care. This should be done both in a written and verbal form.

As a **first-year resident in pediatric surgery** at McMaster it is expected that assessment in the form of history, physical examination be comprehensive and complete and that appropriate investigations are considered. In the second year of the pediatric surgery residency it is expected that appropriate investigations are considered and ordered. During the **second year** recommendations for further care will be developed with appropriate judgment. In the **last six months of the second year** is expected that the recommendations are developing into those of the level of a junior consultant.

In addition a resident in pediatric surgery will start to develop the medical expertise in situations such as providing expert legal testimony or advising government as needed.

It is expected that the McMaster Pediatric Surgery resident will understand the embryology, pathologic types, and differential diagnosis for the following lesions. In addition the resident will understand the indications for both operative and non operative treatment. The resident will develop the surgical skills for treatment as well as understand the possible complications.

Specific Requirements:

Medical Expert – Cognitive and Technical Skills

1. Skin and Soft Tissue-Musculoskeletal

- benign lesions, necrotizing soft tissue infections, cutaneous manifestations of systemic disease (i.e. inflammatory bowel disease syndrome), lymphatic and vascular malformations

2. Head and neck

- congenital lesions: especially thyroglossal duct cyst, branchial cleft cysts; sinuses and other remnants; cystic hygromas / lymphangiomas, hemangiomas
- conditions of salivary glands especially tumours, hemangiomas, inflammation/calculi,



ranula

- acquired neck masses: inflammatory, tumours and congenital torticollis (**Faculty resource – Dr. Walton, Dr. McLean, ENT, Dr. Ted Young H+N**)
- trauma specific to head and neck
- thyroid and parathyroid lesions

3. Thoracic Surgery

- Esophageal atresia and tracheoesophageal fistula (TEF)
- esophageal achalasia, webs, stenosis, duplications
- acquired esophageal conditions: gastroesophageal (GE) reflux, Barrett's esophagus, hiatal hernia; strictures, perforations (cervical, distal), foreign bodies, lye ingestion, webs, stenosis, duplications and tumors
- congenital lung lesions: congenital pulmonary malformations, lobar emphysema, hypoplasia and pulmonary hypertension (**Faculty resource: Dr. Flageole**)
- acquired and congenital lung lesions: emphysema, abscess/pneumatocele, empyema, chylothorax, pulmonary metastases, infiltrates in immunosuppressed patients, blebs and spontaneous pneumothorax; lung complications in cystic fibrosis (CF), effusions, congenital pulmonary malformations, lobar emphysema, hypoplasia and pulmonary hypertension (**Faculty resource: Dr. Flageole**)
- Congenital and acquired airway lesions: clefts, atresia, stenosis and malacia of the larynx, trachea and bronchi (**Collaboration with ENT: Dr. Bruce Korman and Dr. Jonathan MacLean**)
- acquired airway lesions: bronchial adenoma (carcinoids, etc.)
- foreign body aspiration (**Faculty resource Dr. Walton, Dr. Cameron, Dr. Fitzgerald**)
- mediastinal lesions: cysts, thymic disorders, tumors according to location (anterior, middle, posterior)
- chest wall conditions: pectus excavatum and carinatum; tumors; reconstruction (**resource Dr. Fitzgerald and Dr. Walton**)
- diaphragmatic conditions: congenital diaphragmatic hernia (Bochdalek, Morgagni); diaphragmatic eventration and phrenic nerve palsy (**Faculty resource Dr. Flageole**)
- cardiovascular conditions such as patent ductus arteriosus , pericardial effusions and/or tamponade, be knowledgeable of the implications of vascular rings
- Thoracic trauma

4. Abdomen

- abnormalities in gastrointestinal physiologic issues including short bowel syndrome, intestinal adaptation
- physiologic testing (manometry, pH study)
- gastric conditions: pyloric stenosis (including physiologic disturbances), antral web; spontaneous perforation, dysmotility
- peptic ulcer disease

- duodenal conditions: atresias, stenosis, webs, diverticula, duplications
- small intestinal conditions: malrotation, jejunoileal atresia / stenosis, meconium ileus and equivalent; Meckel's diverticulum and related vitelline duct anomalies; necrotizing enterocolitis (NEC); intussusception; duplications, mesenteric cysts; neoplasms; Crohn's disease; congenital bands, mesenteric defects, bowel obstruction
- colonic conditions: appendicitis; inflammatory bowel disease, typhlitis; meconium plug syndrome, intestinal pseudo-obstruction; Hirschsprung's disease, neuronal intestinal dysplasia; colonic atresia, polyps
- anorectal conditions: imperforate anus (and variants); fissures, abscesses, fistulae, condylomata, rectal prolapse; constipation, fecal incontinence
- hepatic and biliary conditions: congenital and acquired liver cysts, trauma, tumors (see oncology section); portal hypertension; liver abscess, biliary atresia, biliary hypoplasia; bile duct perforation, choledochal cyst; gallstones/cholecystitis; physiologic jaundice, cholestatic syndromes; liver transplantation (indications, complications, results)
- splenic conditions: including hemolytic conditions, red blood count (RBC) enzyme deficiencies (pyruvate-kinase, hexose-kinase); idiopathic thrombocytopenic purpura (ITP); Gaucher's disease, splenic cyst/torsion, wandering spleen, lymphangioma, abscess
- pancreatic conditions: cystic fibrosis; pancreas divisum, annular pancreas; pancreatitis, congenital cysts, tumours, hyperinsulinism
- abdominal wall conditions: gastroschisis, omphalocele and variants; hernias; vitelline duct remnants; umbilical granuloma, prune belly syndrome
Adult HPB staff and rounds is available as resources

5. Genitourinary Tract Conditions*

- penis: phimosis, paraphimosis, balanitis, circumcision
- inguinoscrotal area: cryptorchidism, varicocele, hydrocele, acute scrotum
- bladder: exstrophy (bladder, cloacal); urachal anomalies
- tumours: see oncology section
- trauma: kidney, ureter, bladder with adequate knowledge of pelvic fractures and urethral injuries

**See also objectives for pediatric urology rotation*

6. Gynecologic Conditions

- congenital conditions: vaginal atresia, hemato/hydro(metro)colpos, bifid vagina, duplex uterus, urogenital sinus
- inflammatory conditions: pelvic inflammatory disease, vulvovaginitis, vulvar abscess, fusion labia minora



- traumatic/mechanical conditions: vaginal laceration, child abuse; torsion (normal ovary, cyst, tumour)
- neoplastic conditions: ovarian cysts, ovarian solid tumours; vaginal and uterine tumors, vulvar lesions (cysts, nevi, hemangioma)

7. Intersex Anomalies

Pediatric Surgeons will care in collaboration with other health care professionals for children with intersex anomalies such as pediatric urologists (**Drs. Braga and de Maria**). They must therefore demonstrate knowledge of and the capacity to manage patients with these conditions based on knowledge of the differing patterns of disease, natural history, responses to treatment and ethical implications of gender assignment.

This will include patients with adrenogenital syndrome, mixed gonadal dysgenesis, true and pseudo-hermaphroditism, testicular feminization syndrome, and gonadal tumors that may develop in these patients.

8. Endocrine Anomalies

- Pediatric Surgeons will care in collaboration with other health care professionals for children with endocrine anomalies.
- thyroid problems: hyperthyroidism, thyroiditis; tumours, therapy by type, multiple endocrine neoplasia syndromes; management of thyroid mass following neck irradiation; postoperative management (hypocalcemia, respiratory distress, recurrent nerve palsy, follow-up for malignancy)
- parathyroid conditions: hypoparathyroidism; hyperparathyroidism (primary, secondary, tertiary), tumors
- breast conditions: neonatal hypertrophy, mastitis/abscesses; gynecomastia; nipple discharge; fibroadenoma, fibrocystic disease; phyllodes; premature thelarche
- pancreatic conditions: hyperinsulinism (age dependent); functioning endocrine lesions (islet cell tumours, VIPoma, gastrinoma including Zollinger-Ellison (Z-E) syndrome)
- adrenal conditions: adrenal hemorrhage, adrenal insufficiency (congenital or acquired) adrenocortical tumours (aldosteronoma - Conn's syndrome ; Cushing's syndrome -hyperplasia vs. carcinoma ; virilizing tumours) ; pheochromocytoma

9. Oncology

McMaster Children's Hospital pediatric surgery residents will learn to care for children with oncologic problems in collaboration with other healthcare professionals. There is a pediatric hematology oncology training program at McMaster University and the McMaster Children's Hospital. Pediatric surgery resident will interact with postgraduate trainees as well as nurses based on Ward 3B and in the 3F clinic. The Pediatric Surgery residents will participate at the McMaster Children's Hospital Tumor Board. They will learn:



- general principles: pathologic analysis of tumors including molecular biology, tumor markers and cytogenetics, tumor specific risk stratification, genetic predisposition and other risk factors; paraneoplastic and tumour associated syndromes (e.g., opsomyoclonus ataxia syndrome); tumors associated with syndromes such as Beckwith Weidemann and hemi-hypertrophy
- diagnostic imaging for tumor evaluation
- principles of tumor therapy including immunotherapy, radiation biology, immunosuppression and opportunistic infections, cancer nutrition, chemotherapy and drug action; surgical complications of chemotherapy and bone marrow transplantation; secondary neoplasia

Specific tumors:

- renal tumors: Wilms' tumor, mesoblastic nephroma, nephroblastomatosis, adenocarcinoma, clear cell sarcoma, renal cell carcinoma, lymphoma and rhabdoid tumor. These are managed in a collaborative manner pediatric urology team of **Drs. de Maria and Braga**.
- adrenal tumors: neuroblastoma, ganglioneuroblastoma, carcinoma, pheochromocytoma
- liver tumours: benign (hemangioma, hemangiomatosis, hemangiopericytoma, hamartoma, adenoma, focal nodular hyperplasia [FNH]); malignant (hepatoblastoma, hepatocellular carcinoma), liver metastasis
- G.I. tumors such as adenocarcinoma, carcinoid, GIST, desmoid tumors
- sarcomas/PNET: rhabdomyosarcoma, fibrosarcoma, leiomyosarcoma, liposarcoma, neurofibromas, desmoplastic small round cell tumor
- teratomas: sacrococcygeal and gonadal tumours, familial teratomas, associated syndromes; other teratoma sites
- lymphoma: Hodgkin's Disease; Non-Hodgkin's Disease, post-transplantation lymphoproliferative disease and AIDS (acquired immunodeficiency syndrome)
- bone tumours: osteogenic sarcoma and Ewing's sarcoma (including peripheral neuroectodermal tumors [PNET]) as they relate to pediatric surgical intervention (rib resection, lung metastases, etc.)
- breast: fibroadenoma, carcinoma, phyllodes tumors
- skin and subcutaneous: melanoma, lipoblastoma, fibroblastoma. Skin lesions are managed and assessed collaboratively with pediatric plastic surgeons.

Gonadal tumours:

- benign and malignant testicular tumors including teratoma, other germ cell and non-germ cell tumors, para testicular rhabdomyosarcoma, metastatic i.e. leukemia
- ovarian benign and malignant tumors including teratoma, carcinoma, serous, mucinous, yolk sac, teratoma, carcinoma, sertoli/lutein, sertoli-Leydig, dysgerminoma, vaginal and uterine tumors (yolk sac, rhabdomyosarcoma). Ovarian lesions are managed by pediatric surgery in collaboration with the gynecologic oncology service based at the Juravinski



hospital.

- head and neck: salivary gland tumors; lymphoma, rhabdomyosarcoma, neuroblastoma, teratoma, nasopharyngeal carcinoma, thyroid and parathyroid tumors
- Thoracopulmonary: pleuropulmonary blastoma, bronchoalveolar carcinoma, carcinoid
- other: inflammatory pseudo-tumor

Role of pediatric surgery in palliative care:

- Understand the approach to palliative care in pediatric surgery in situations such as trauma, oncology, neonatology, and complex medical disease

10. Critical Care

Critical care goals and objectives will be separately highlighted for rotations in the neonatal intensive care unit and the pediatric critical care unit. The various conditions that are important for the care of critically ill and injured children include:

- fluids and electrolytes:
- thermoregulation: physiologic effects and management of hypothermia and hyperthermia
- diagnosis and treatment of shock
- both normal and abnormal pulmonary physiology in various age groups
- cardiac physiology: knowledge of cyanotic and non-cyanotic congenital anomalies, intra-cardiac shunts; transitional circulation and inotropic support
- transfusion therapy and coagulation:
- anesthesiology: principles of airway management (including tracheostomy), inhalation agents, muscle relaxants, recognition and management of malignant hyperthermia;
- differential diagnosis and treatment of cardiorespiratory arrest
- management of postoperative pain in infants and children, principles of hemodynamic and respiratory monitoring: principles of local anesthetic use
- extra-corporeal life support (ECLS): indications in neonates and older children, techniques of cannulation, monitoring, and complications

The pediatric surgery resident will gain extensive experience in the indications, techniques and possible complications of the various types of central line insertion including intra-osseous, temporary and long-term, implantable ports.

11. Trauma and Burns (Faculty resource Dr. Karen Bailey)

Trauma: demographics, epidemiology; recognizable patterns of injury (i.e., seat belt syndrome, patterns of child abuse); Primary assessment; principles of operative and non-operative management of head, neck, chest, abdomen, pelvis, genitourinary and extremity trauma

Burns: pathophysiology of burn injury; fluid resuscitation (initial and maintenance); nutritional management, sepsis

Trauma specific certain areas including:

- cranial: diagnosis and emergency management including the indications for increased intracranial pressure monitoring; use of Glasgow coma scale
- cervical: injuries to the esophagus, trachea, blood vessels; airway management including tracheostomy, recognition and emergency management of cervical spine fractures
- abdominal and genitourinary: intestinal trauma, lap belt injury; hepatic trauma (operative and nonoperative management), hemobilia: splenic trauma (nonoperative and operative management including repair, partial splenectomy use of vaccines and prophylactic antibiotics, splenectomy risks), the kidney, ureter, bladder and their relationship to pelvic fractures and urethral injuries

12. Nutrition

Normal caloric requirements by age groups, carbohydrate, fat and protein contributions and concentrations, vitamins, trace elements, minerals; nutritional assessment techniques; enteral vs. parenteral nutrition; enteral formulas, defined diets; parenteral nutrition (peripheral vs. central solutions, complications), influence of disease on nutritional requirements (trauma, burns)

The resident should know indications, techniques and complications of feeding tube and parenteral line insertion as well as disorders of nutrition including obesity and metabolic syndromes, malnutrition states, short bowel syndrome and re-feeding syndrome

13. Neonatology*

- Surgeons will care in collaboration with other health care professionals for premature and ill newborns. They must demonstrate knowledge of:
- physiology of the newborn and premature infant: comparison with small/large for gestational age infants, IUGR and very low birth weight (VLBW) newborns; complications, fluid and electrolyte requirements, thermoregulation, metabolic rate; cerebral, renal hepatic and cardiopulmonary function, formulas and caloric requirements



- hyperbilirubinemia: physiology, phototherapy, exchange transfusion, cholestasis
- intracranial bleeding: staging, techniques of diagnosis, site of blood, management, outcome
- cardiopulmonary support of the newborn: principles on noninvasive and invasive ventilatory support; congenital diaphragmatic hernia pulmonary hypertension of the newborn, meconium aspiration; inotropic support; principles of ECLS; surfactant use
- neonatal sepsis: etiology and risk factors, immune status, diagnostic workup, bacteriology, treatment
- pharmacokinetics

* See also objectives for NICU rotation

14. Transplantation

Surgeons will care in collaboration with other health care professionals for children with organ transplants or awaiting transplantation. They must therefore demonstrate knowledge of the indications for liver, kidney, small bowel transplants, and of immunosuppressive agents (effects and complications).

B - MEDICAL EXPERT – TECHNICAL

By the end of training, the resident should have acquired and demonstrate the following skills, as they apply to a pediatric surgical practice.

1. Surgical Skills

Prior to starting a pediatric surgery residency the resident is expected to be able to perform independently the full spectrum of operative interventions for a general surgeon. In addition to this there are a number of pediatric surgery specific conditions which the pediatric surgery resident will gain experience and proficiency (refer to Medical Expert section for specifics).

It is expected over the two-year pediatric surgery residency that the trainee will gain progressive experience in a technical and surgical skills point of view. **In the first year of training in pediatric surgery, the resident must learn to perform the common surgical procedures that a pediatric surgeon is expected to do routinely (hernia repairs, pyloromotomy).** Especially in the **second year, the pediatric surgery resident should learn and be able to demonstrate proficiency in advance pediatric surgery procedures (index cases)** such as pediatric oncology surgery and neonatal surgery. In the **final six months** of pediatric surgery training, the resident should be able to demonstrate progressive operative independence including taking on more of a teaching role with junior trainees.

2. Trauma – Faculty Resource Dr. Karen Bailey Director of the Pediatric Trauma Program

The Pediatric Surgery resident is expected to:

- develop the skills and knowledge over 2 years to function as a trauma team leader in the last 6 months of training
- function as the operating surgeon for pediatric trauma patients, and as supervising surgeon in an operating room in which several specialty groups may be working simultaneously
- have primary responsibility for the non-operative care of the trauma patient including major burns
- be able to obtain airway and vascular access in the trauma patient, and perform appropriate diagnostic procedures

3. Endoscopy

The resident should be familiar with the indications, techniques and complications of:

- laryngoscopy, bronchoscopy
- esophagoscopy / gastroscopy / duodenoscopy
- thoracoscopy
- laparoscopy
- proctosigmoidoscopy / colonoscopy

The resident must also know the basics of cystoscopy and vaginoscopy as applied to the treatment of ambiguous genitalia and imperforate anus.

4. Other Procedures

The resident should be familiar with the indications, techniques and complications of:

- central line insertion (temporary and long-term, implantable ports)
- tracheostomy

C- SECONDARY KNOWLEDGE OBJECTIVES

1. Emergency Care of Croup and Epiglottitis

2. Cardiac Surgery

- Patent ductus arteriosus (PDA) this procedure is done by the pediatric surgeons at McMaster Children's Hospital (**Faculty resources-Dr Walton, Dr Fitzgerald, Dr Cameron and Dr Flageole**)
- pediatric surgery resident should have knowledge concerning:
- coarctation of the aorta, arch anomalies, vascular ring / sling (esp. as related to pediatric general surgical complications)
- systemic/pulmonary shunts, pericardiectomy, pulmonary artery banding
- atrial septal defect (ASD), ventricular septal defect (VSD), septum primum
- tetralogy of Fallot, transposition of great vessels (TOGV), arterio-venous (A-V) canal, hypoplastic left heart
- cardiac transplantation

3. Vascular Conditions

- management of vascular injuries
- methods of arterial reconstruction
- management of renal vascular hypertension related to arterial disorders (stenosis, fibromuscular dysplasia, abdominal coarctation)
- angiographic and Doppler imaging: indications and techniques
- vascular access for hemodialysis

4. Urology*

- kidney: ureteropelvic junction (UPJ) obstruction, duplex systems, renal transplantation
- ureter: vesicoureteral reflux, megaureter, ectopic ureter, ureterocele, ureteral duplication and associated problems, ureteroureterostomy
- stones: kidney (open vs. endourologic therapy), ureteral, bladder including metabolic aspects
- bladder: diverticulum, neurogenic bladder, bladder neck obstruction, bladder augmentation, tumors
- urethra: hypospadias, epispadias, urethral valves (anterior and posterior)
- urinary diversion: indications and techniques (vesicostomy, nephrostomy, ureterostomy, colonic conduit, continent diversions)
- endoscopy of the urinary tract, urodynamics, evaluation of hematuria
- peritoneal dialysis and hemodialysis access (central catheter, A-V fistula)

**See also objectives for pediatric urology rotation*

5. Plastic Surgery

- head and neck: contractures, facial anomalies, wounds
- skin: frostbite, soft tissue injury, wound healing, wound management
- hand: infection, lacerations (recognition of nerve and tendon injury)
- burns: recognition and management of burn wound infection (including wound biopsy techniques); burn wound excision; use of skin substitutes; burn rehabilitation, (including psychological effects and recovery)
- techniques: skin grafting, microsurgery, use of flaps and Z-plasty

6. Orthopedics

- traumatic: pulled elbow, major long bone injury (femur, humerus, supracondylar fracture, Volkman's ischemic contracture, ankle, wrist injury, knee injury and dislocation, compartment syndrome)
- congenital: hip dislocation, club foot
- acquired: osteochondritis dissecans, slipped capital femoral epiphysis
- scoliosis: idiopathic, hemivertebrae
- tumours (osteogenic sarcoma, Ewing's tumour): concepts of limb salvage, chemotherapy

7. Neurosurgery

- spina bifida, tethered cord
- ventriculoperitoneal shunt complications
- midline dermoid lesions

D. SECONDARY SKILLS OBJECTIVES

Experience/knowledge is recommended in the following areas:

1. Other thoracic surgery

- laryngotracheoplasty
- tracheobronchial reconstruction
- bronchoscopy for tracheo-bronchial foreign bodies - surgical resources for this at McMaster Children's Hospital include Dr. Brian Cameron, Dr. Peter Fitzgerald and Dr. Mark Walton.

I - Communicator

General Requirements:

- Obtain and synthesize relevant history from patients, their families and the community.
- Establish a therapeutic relationship with patients and their family and discuss appropriate information with the health care team.
- Listen effectively
- Demonstrate effective communication skills
- Maintain adequate records.

Specific Requirements:

- Demonstrate an appreciation of the unique psychological needs of pediatric patients.
- 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.

II - Collaborator

General Requirements:

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.

Specific Requirements:

- Use effectively the team approach in the management of critically and chronically ill patients, such as newborns with congenital anomalies and children with cancer, inflammatory bowel disease, short bowel syndrome, or transplantation.

III - Manager

General Requirements:

- Utilize resources effectively to balance patient care, learning needs, and outside activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize health care technology to optimize patient care, life-long learning and other activities.

Specific Requirements:

- 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, and actively participate in hospital-based quality assurance and improvement programs.
- The **chief pediatric surgery resident** will be in charge of managing the pediatric surgery team including assigning duties to the residents and medical students on the service and coordinating patient care rounds. In addition the chief surgical resident will design the call schedule collaborative manner with the residents.
- The **chief pediatric surgery resident** should demonstrate effective management of the operating room, clinic, emergency consults and the patient ward.

IV - Health Advocate

General Requirements:

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities and injury prevention.
- Recognize and respond to those issues where advocacy is appropriate.

Specific Requirements:

- Be knowledgeable about appropriate use of car safety restraints according to the child's size (ie. rear-facing infant seats, forward-facing car seats, booster seats, lap-shoulder belts).
- Contribute to health-maintenance advocacy for children, including such areas as travel safety, helmet use, children operating machinery or motorized vehicles, and accessibility to firearms.
- understanding of injury prevention and control of the pediatric surgeon in advocacy for injury prevention policies for children and youth
- identify the need and develop a plan for ongoing post-discharge care and support

V - Scholar

General Requirements:

- Develop, implement and monitor a personal continuing education strategy through the use of academic half day activities including Journal club, chapter rounds and other presentations.
- Critically appraise sources of medical information.
- Facilitate learning of patients, housestaff / students and other health care professionals through formal and informal teaching opportunities.

Specific Requirements:

- Contribute to development of new knowledge to foster the academic growth of the specialty of Pediatric Surgery by participating in scholarly work such as submitting original research for presentation and publication.
- Take on the role as the pediatric surgical teacher for the Junior residents and medical students on the pediatric surgery service.

VI - Professional

General Requirements:

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

Specific Requirements:

- 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.
- Utilize the ethics modules in order to develop suitable and ethically-based approaches to difficult clinical problem.
- Recognize the importance of maintenance of competence and evaluation of outcomes.
- Understand the legal issues related to consent, confidentiality, and refusal of treatment.
- Maintain appropriate work-life balance.

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