

2017
VERSION 2.0

This document applies to those who begin training on or after July 1st, 2017.

NOTE: Throughout this document, references to the patient's family are intended to include all those who are personally significant to the patient and are concerned with his or her care, including, according to the patient's circumstances, family members, partners, caregivers, legal guardians, and substitute decision-makers.

DEFINITION

General Surgery is that branch of surgery concerned with the diagnosis and management of patients with a broad range of clinical problems. This specialty focuses on patients with conditions involving the alimentary tract, including the liver and pancreas, as well as endocrine disorders, and conditions of the breast, skin and soft tissues, and the abdominal wall. The nature of the practice includes providing both acute and non-acute surgical care as well as gastrointestinal endoscopy. Recognizing the generalist nature of this specialty, general surgeons may provide care for patients with a broad range of surgical conditions, depending on the specific practice environment.

GOALS

Upon completion of training, a resident is expected to be a competent specialist in General Surgery, capable of assuming a consultant's role in the specialty. The resident must acquire a working knowledge of the theoretical basis of the specialty, including its foundations in science and research, as it applies to surgical practice.

Residents must demonstrate the requisite knowledge, skills, and behaviours for effective patient-centred care and service to a diverse population. In all aspects of specialist practice, the graduate must be able to address ethical issues and issues of gender, sexual orientation, age, culture, beliefs, and ethnicity in a professional manner.

GENERAL SURGERY COMPETENCIES

At the completion of training, the resident will have acquired the following competencies and will function effectively as a:

Medical Expert

Definition:

As *Medical Experts*, General Surgeons integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care. *Medical Expert* is the central surgeon Role in the CanMEDS framework.

Key and Enabling Competencies: General Surgeons are able to...

1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centred medical care

- 1.1. Perform a consultation effectively, including the presentation of well-documented assessments and recommendations in oral, written and/or electronic form in response to a request from another health care professional
- 1.2. Demonstrate use of all CanMEDS competencies relevant to General Surgery
- 1.3. Identify and appropriately respond to relevant ethical issues arising in patient care
- 1.4. Demonstrate the ability to prioritize professional duties effectively when faced with multiple patients and problems
- 1.5. Demonstrate compassionate and patient-centred care
- 1.6. Recognize and respond to the ethical dimensions in medical decision-making
- 1.7. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governments, as needed

2. Establish and maintain clinical knowledge, skills, and behaviours appropriate to their practice

- 2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to General Surgery
 - 2.1.1. Esophagus
 - 2.1.1.1. Surgical anatomy, including but not limited to relationships to other structures in the neck, mediastinum, and upper abdomen; arterial supply, venous drainage, and lymphatic drainage
 - 2.1.1.2. Physiology
 - 2.1.1.2.1. Pharyngoesophageal function and swallowing
 - 2.1.1.2.2. Esophageal peristalsis
 - 2.1.1.2.3. Lower esophageal sphincter function
 - 2.1.1.2.4. Antireflux mechanisms
 - 2.1.1.3. Clinical conditions
 - 2.1.1.3.1. Anatomic abnormalities, including but not limited to esophageal diverticula and hiatus hernia

- 2.1.1.3.2. Pharyngoesophageal motility disorders
 - 2.1.1.3.3. Infectious and inflammatory conditions, including but not limited to eosinophilic esophagitis
 - 2.1.1.3.4. Gastroesophageal reflux disease and its complications, including but not limited to Barrett's esophagus
 - 2.1.1.3.5. Injuries, including but not limited to perforation, trauma, and caustic exposure
 - 2.1.1.3.6. Obstruction, including but not limited to foreign bodies and strictures
 - 2.1.1.3.7. Neoplasms: benign and malignant
- 2.1.2. Stomach and duodenum
- 2.1.2.1. Surgical anatomy, including but not limited to relationships to other structures in the abdomen; arterial supply, venous drainage, and lymphatic drainage
 - 2.1.2.2. Physiology
 - 2.1.2.2.1. Gastric acid secretion and gastric emptying
 - 2.1.2.2.2. Duodenal exocrine and endocrine function
 - 2.1.2.3. Clinical conditions
 - 2.1.2.3.1. Peptic ulcer disease and its complications, including but not limited to hemorrhage, perforation, and obstruction
 - 2.1.2.3.1.1. Long-term complications after peptic ulcer surgery
 - 2.1.2.3.2. Stress gastritis
 - 2.1.2.3.3. Gastric foreign bodies
 - 2.1.2.3.4. Neoplasms of the stomach: benign and malignant
 - 2.1.2.3.5. Neoplasms of the duodenum: benign and malignant
 - 2.1.2.3.6. Vascular compression of the duodenum
- 2.1.3. Small intestine
- 2.1.3.1. Surgical anatomy, including but not limited to relationships to other structures in the abdomen; arterial supply, venous drainage, lymphatic drainage, and autonomic innervation
 - 2.1.3.2. Physiology
 - 2.1.3.2.1. Absorption of water, electrolytes, macronutrients, micronutrients and trace elements

2.1.3.3. Clinical conditions

- 2.1.3.3.1. Inflammatory conditions, including but not limited to Crohn's disease, neutropenic enteritis, and radiation enteritis
- 2.1.3.3.2. Ischemia: acute and chronic
- 2.1.3.3.3. Neoplasms: benign and malignant, including but not limited to
 - 2.1.3.3.3.1. Adenocarcinoma
 - 2.1.3.3.3.2. Lymphoma
 - 2.1.3.3.3.3. Gastrointestinal (GI) stromal tumours
 - 2.1.3.3.3.4. Neuroendocrine tumours
 - 2.1.3.3.3.5. Carcinomatosis
 - 2.1.3.3.3.6. Metastases from other sites
- 2.1.3.3.4. Obstruction, including but not limited to adhesions, intussusception, and gallstone ileus
- 2.1.3.3.5. Other conditions, including but not limited to infectious diseases, hemorrhage, foreign bodies, and short bowel syndrome
- 2.1.3.3.6. Post-operative complications, including but not limited to ileus, anastomotic leaks, and entero-cutaneous fistulae

2.1.4. Colon

- 2.1.4.1. Surgical anatomy, including but not limited to relationships to other structures in the abdomen, peritoneal attachments and anatomy of the retroperitoneum; arterial supply, venous drainage, lymphatic drainage, and autonomic innervation
- 2.1.4.2. Physiology, including but not limited to fluid absorption and colonic motility
- 2.1.4.3. Clinical conditions
 - 2.1.4.3.1. Obstruction
 - 2.1.4.3.2. Hemorrhage
 - 2.1.4.3.3. Perforation
 - 2.1.4.3.4. Inflammatory conditions, including but not limited to inflammatory bowel diseases: Crohn's disease, ulcerative colitis, and microscopic colitis
 - 2.1.4.3.5. Diverticular disease and its complications
 - 2.1.4.3.6. Appendicitis

- 2.1.4.3.7. Infectious conditions, including but not limited to conditions caused by *Clostridium difficile* and cytomegalovirus
- 2.1.4.3.8. Ischemia: occlusive and non-occlusive disease
- 2.1.4.3.9. Neoplasms: benign and malignant
 - 2.1.4.3.9.1. Sporadic cancer: mechanism and adenoma-to-carcinoma sequence
 - 2.1.4.3.9.2. Familial cancer: familial adenomatous polyposis (FAP), hereditary nonpolyposis colorectal cancer (HNPCC), and other polyposis syndromes
- 2.1.4.3.10. Motility disorders, including but not limited to irritable bowel syndrome, colonic inertia, and acute and chronic pseudo-obstruction
- 2.1.4.3.11. Complications following colostomy
- 2.1.5. Rectum and anus
 - 2.1.5.1. Surgical anatomy, including but not limited to relationships to other structures in the pelvis and perineum; arterial supply, venous drainage, lymphatic drainage, innervation, anal sphincter complex, pelvic floor musculature, and perirectal and perianal spaces
 - 2.1.5.2. Physiology of continence and defecation
 - 2.1.5.3. Clinical conditions
 - 2.1.5.3.1. Rectal conditions
 - 2.1.5.3.1.1. Rectal prolapse, rectocele
 - 2.1.5.3.1.2. Rectovaginal fistula
 - 2.1.5.3.1.3. Proctitis, including but not limited to ulcerative colitis, radiation, and sexually transmitted infection
 - 2.1.5.3.1.4. Neoplasms: benign and malignant
 - 2.1.5.3.1.5. Fecal incontinence
 - 2.1.5.3.1.6. Obstructed defecation
 - 2.1.5.3.2. Anal and perianal conditions
 - 2.1.5.3.2.1. Hemorrhoids
 - 2.1.5.3.2.2. Anal fissure: acute and chronic
 - 2.1.5.3.2.3. Abscess
 - 2.1.5.3.2.4. Fistula
 - 2.1.5.3.2.5. Condyloma
 - 2.1.5.3.2.6. Neoplasms of the anal canal and perianal skin
 - 2.1.5.3.2.7. Pruritus ani

2.1.6. Liver, biliary tract, and pancreas

2.1.6.1. Surgical anatomy of the liver and biliary tract, including but not limited to relationships of the liver and biliary tract to other structures in the abdomen; segmental anatomy of the liver, normal and common variants of biliary anatomy, normal and common variants of hepatic arterial supply and venous drainage, lymphatic drainage, and the relationship of the portal and systemic circulations

2.1.6.2. Surgical anatomy of the pancreas, including but not limited to the gross anatomic divisions of the pancreas, its relationships to other structures in the abdomen; arterial supply, venous drainage, lymphatic drainage, and ductal anatomy and its variants

2.1.6.3. Physiology

2.1.6.3.1. Liver blood flow, including imaging of blood flow and changes with regeneration

2.1.6.3.2. Bilirubin metabolism: bile production, excretion, and enterohepatic circulation

2.1.6.3.3. Pancreatic endocrine function

2.1.6.3.4. Pancreatic exocrine function

2.1.6.4. Clinical conditions

2.1.6.4.1. Liver

2.1.6.4.1.1. Infections: viral, bacterial, parasitic

2.1.6.4.1.2. Liver cysts: benign (simple and complex), and malignant

2.1.6.4.1.3. Solid neoplasms: benign and malignant

2.1.6.4.1.4. Portal hypertension

2.1.6.4.1.5. Acute liver failure

2.1.6.4.1.6. Indications for transplantation

2.1.6.4.2. Biliary tract

2.1.6.4.2.1. Stone formation and complications

2.1.6.4.2.2. Biliary obstruction and its complications

2.1.6.4.2.3. Benign inflammatory processes

2.1.6.4.2.4. Neoplasms: benign and malignant

2.1.6.4.2.5. Biliary tract injury

2.1.6.4.3. Pancreas

2.1.6.4.3.1. Pancreatitis, including but not limited to etiologies and local and systemic complications

- 2.1.6.4.3.2. Cystic lesions, including inflammatory, infectious, and neoplastic
- 2.1.6.4.3.3. Solid neoplasms: benign and malignant

2.1.7. Spleen

- 2.1.7.1. Surgical anatomy, including but not limited to relationships to other structures in the abdomen and specific attachments; arterial supply, venous drainage, and locations of accessory splenic tissue
- 2.1.7.2. Physiology, including immunologic and hematologic functions, and alterations to the peripheral blood and immune function post-splenectomy
- 2.1.7.3. Clinical conditions
 - 2.1.7.3.1. Splenic abscess and infection
 - 2.1.7.3.2. Overwhelming post-splenectomy sepsis/infection
 - 2.1.7.3.3. Splenomegaly and hypersplenism
 - 2.1.7.3.4. Splenic vein thrombosis and left sided portal hypertension
 - 2.1.7.3.5. Idiopathic thrombocytopenic purpura
 - 2.1.7.3.6. Hemolytic anemias
 - 2.1.7.3.7. Cystic lesions
 - 2.1.7.3.8. Neoplasms: benign and malignant

2.1.8. Lymph Nodes

- 2.1.8.1. Surgical anatomy
 - 2.1.8.1.1. Basic structure of a lymph node
 - 2.1.8.1.2. Organization of the lymphatic system, including but not limited to the thoracic duct and cisterna chyli
 - 2.1.8.1.3. Lymph node levels in the neck, axilla, and groin
- 2.1.8.2. Physiology
 - 2.1.8.2.1. Lymph node function: follicle, germinal centre, B and T cell
 - 2.1.8.2.2. Lymphatic system function: interstitial fluid, immune
- 2.1.8.3. Clinical conditions
 - 2.1.8.3.1. Conditions affecting lymph nodes, including but not limited to inflammatory, infectious and neoplastic diseases
 - 2.1.8.3.2. Conditions affecting the lymphatic system including but not limited to lymphedema and chyle leakage

2.1.9. Breast

2.1.9.1. Surgical anatomy of the breast and axilla, including but not limited to relationships to adjacent structures and locations of major nerves; arterial supply, venous drainage, lymphatic drainage, and innervation

2.1.9.2. Physiology

2.1.9.2.1. Normal breast development

2.1.9.2.2. Hormonally-mediated breast changes, including but not limited to puberty, the menstrual cycle, and pregnancy

2.1.9.2.3. Normal lactation

2.1.9.2.4. Breast involution

2.1.9.3. Clinical conditions

2.1.9.3.1. Nipple discharge

2.1.9.3.2. Infection

2.1.9.3.3. Mastalgia

2.1.9.3.4. Gynecomastia

2.1.9.3.5. Cysts

2.1.9.3.6. Neoplasms: benign and malignant

2.1.10. Adrenal gland

2.1.10.1. Surgical anatomy, including but not limited to the anatomic boundaries of the left and right adrenal glands and their relationships to other structures in the abdomen; arterial supply, venous drainage, and the component zones of the glands and their respective functions

2.1.10.2. Physiology

2.1.10.2.1. Hormones produced by each zone of the adrenal gland, regulation of their secretion as well as the effect of exogenous administration of these hormones on the function of the adrenal gland

2.1.10.3. Clinical conditions

2.1.10.3.1. Cushing's disease and Cushing's syndrome

2.1.10.3.2. Primary hyperaldosteronism

2.1.10.3.3. Catecholamine excess disorders

2.1.10.3.4. Adrenal insufficiency

2.1.10.3.5. Adrenal suppression

- 2.1.10.3.6. Adrenal hemorrhage
- 2.1.10.3.7. Neoplasms of the adrenal cortex and adrenal medulla: benign and malignant

2.1.11. Abdominal wall

2.1.11.1. Surgical anatomy of the following:

- 2.1.11.1.1. Abdominal wall, including muscular and fascial components
- 2.1.11.1.2. Inguinal and femoral regions
- 2.1.11.1.3. Normal testicular descent, and the layers of the spermatic cord

2.1.11.2. Clinical conditions

2.1.11.2.1. Anatomic abnormalities resulting in the following hernias

- 2.1.11.2.1.1. Indirect inguinal
- 2.1.11.2.1.2. Direct inguinal
- 2.1.11.2.1.3. Femoral
- 2.1.11.2.1.4. Umbilical
- 2.1.11.2.1.5. Obturator
- 2.1.11.2.1.6. Lumbar
- 2.1.11.2.1.7. Spigelian

2.1.11.2.2. Structural abnormalities resulting in the following hernias

- 2.1.11.2.2.1. Ventral
- 2.1.11.2.2.2. Parastomal
- 2.1.11.2.2.3. Internal

2.1.12. Skin and soft tissue

2.1.12.1. Anatomy

- 2.1.12.1.1. Epidermis
- 2.1.12.1.2. Dermis
- 2.1.12.1.3. Cutaneous adnexal structures

2.1.12.2. Physiology

- 2.1.12.2.1. Biological response to UV light and other radiation
- 2.1.12.2.2. Biology of the melanocyte
- 2.1.12.2.3. Etiological factors of skin cancer

2.1.12.3. Clinical conditions

2.1.12.3.1. Injuries

- 2.1.12.3.1.1. Traumatic
- 2.1.12.3.1.2. Exposure to caustic substances
- 2.1.12.3.1.3. Thermal
- 2.1.12.3.1.4. Pressure
- 2.1.12.3.1.5. Radiation
- 2.1.12.3.1.6. Bites

2.1.12.3.2. Bacterial infections

- 2.1.12.3.2.1. Paronychia
- 2.1.12.3.2.2. Folliculitis, furuncles, and carbuncles
- 2.1.12.3.2.3. Staphylococcal scalded skin syndrome
- 2.1.12.3.2.4. Necrotizing soft tissue infection
- 2.1.12.3.2.5. Actinomycosis

2.1.12.3.3. Viral infections

- 2.1.12.3.3.1. Human papillomavirus
- 2.1.12.3.3.2. Human immunodeficiency virus

2.1.12.3.4. Inflammatory

- 2.1.12.3.4.1. Hidradenitis suppurativa
- 2.1.12.3.4.2. Pyoderma gangrenosum
- 2.1.12.3.4.3. Pilonidal disease

2.1.12.3.5. Neoplastic

- 2.1.12.3.5.1. Benign tumours of the skin and subcutaneous soft tissue, including but not limited to keratoses, nevi, soft tissue tumours, and neural tumours
- 2.1.12.3.5.2. Malignant tumors of the skin and subcutaneous tissue, including but not limited to basal cell carcinoma, squamous cell carcinoma, malignant melanoma, extramammary Paget's disease, and soft tissue sarcomas
- 2.1.12.3.5.3. Primary and secondary prevention of skin cancers
- 2.1.12.3.5.4. Chemoprevention of skin cancers

2.1.12.3.6. Cysts, including but not limited to epidermal and trichilemmal cysts, and dermoid tumour/cyst

2.1.13. Vascular

2.1.13.1. Surgical anatomy of major blood vessels throughout the body, excluding the intracranial vessels: normal branching pattern and distribution, common variants, and relationships to vital structures

2.1.13.2. Clinical conditions

2.1.13.2.1. Visceral ischemia, both acute and chronic

2.1.13.2.2. Upper and lower limb ischemia, both acute and chronic

2.1.13.2.3. Chronic venous disease

2.1.14. Head and neck

2.1.14.1. Surgical anatomy

2.1.14.1.1. Major structures of the neck, including but not limited to the triangles of the neck, major arteries, veins, nerves, and lymph node groups

2.1.14.1.2. Thyroid gland, including but not limited to its relationships to other structures; its arterial supply and venous drainage; and the location of the superior laryngeal nerves and recurrent laryngeal nerves

2.1.14.1.3. Parathyroid glands, including the typical and atypical locations of the glands

2.1.14.1.4. Salivary glands: the parotid and submandibular glands, their ducts and innervation

2.1.14.2. Physiology

2.1.14.2.1. Thyroid gland function

2.1.14.2.2. Parathyroid gland function

2.1.14.3. Clinical conditions

2.1.14.3.1. Hyperthyroidism and hypothyroidism

2.1.14.3.2. Hyperparathyroidism

2.1.14.3.3. Cysts of the neck

2.1.14.3.4. Neoplasms of the thyroid gland: benign and malignant

2.1.14.3.5. Neoplasms of the salivary glands: benign and malignant

2.1.14.3.6. Neoplasms of the head and neck: benign, premalignant, and malignant

2.1.15. Oncology

2.1.15.1. Tumour biology

- 2.1.15.1.1. Normal mechanisms of cellular differentiation and the cell cycle
- 2.1.15.1.2. Definitions of normal cellular growth, hypertrophy, hyperplasia, dysplasia, neoplasia, carcinogenesis and metastasis
- 2.1.15.1.3. Effects of radiation on the cell cycle
- 2.1.15.1.4. Mechanisms of action of systemic therapies, including targeted therapies, on the cell cycle

2.1.15.2. Tumour genetics

- 2.1.15.2.1. Oncogenes and tumour suppressor genes
- 2.1.15.2.2. Common mechanisms by which malignancy can be caused
- 2.1.15.2.3. Role of genetic testing in suspected hereditary cancers

2.1.15.3. Familial predisposition to malignancy

- 2.1.15.3.1. Common familial cancer syndromes and their genetic mechanisms
- 2.1.15.3.2. Role of a thorough family history, including but not limited to relationships to the proband and age of onset of malignancy, in assessment of a potential familial predisposition
- 2.1.15.3.3. Importance of collaboration with experts in medical genetics in the assessment of familial cancer syndromes
- 2.1.15.3.4. Role of prophylactic surgery in hereditary cancer syndromes, including but not limited to multiple endocrine neoplasia, breast cancer genes BRCA1 and BRCA2, FAP, HNPCC, and hereditary diffuse gastric cancer

2.1.15.4. Prevention of malignancy

- 2.1.15.4.1. Mechanisms that can be used to protect against or limit the risk of malignancy: environmental factors, medications, and vaccines
- 2.1.15.4.2. Definition and important attributes of a screening test, and knowledge of those malignancies for which there are effective screening tests
- 2.1.15.4.3. Recommended screening and surveillance protocols for patients with an inherited syndrome, a familial syndrome (no known mutation), or those suspected of an increased risk of malignancy
- 2.1.15.4.4. Role of prophylactic surgery in the prevention of malignancy in those at high risk

2.1.15.5. Diagnosis of malignancy

- 2.1.15.5.1. Appropriate methods of tissue sampling for diagnosis, including optimal handling of specimens for evaluation by pathologists and other laboratory professionals
- 2.1.15.5.2. Appropriate methods of staging for specific malignancies
- 2.1.15.5.3. Role of molecular diagnostics and the potential impact on treatment, prognosis, and outcome

2.1.15.6. Use of guidelines for management of malignancy

2.1.15.7. Treatment of patient with malignancies

- 2.1.15.7.1. Role of surgery in the diagnosis and staging, prolongation of survival, cure, and palliation from malignancy
- 2.1.15.7.2. Role and the principles of adjuvant and neoadjuvant therapies for malignancies, including but not limited to chemotherapy, radiotherapy, immunotherapy, and hormone therapy
- 2.1.15.7.3. Role of multidisciplinary care in treating patients with solid tissue malignancies
- 2.1.15.7.4. Role of treatments that provide effective palliation, enhance prevention and decrease recurrence, and improve quality of life

2.1.15.8. Principles of a followup program for patients who have been treated for malignancies

2.1.16. Trauma

2.1.16.1. Surgical anatomy

- 2.1.16.1.1. Cervical anatomy: vessels, trachea, esophagus
- 2.1.16.1.2. Thoracic anatomy: chest wall, lung, pleura, mediastinal vascular, and aerodigestive structures and their relation to each other
- 2.1.16.1.3. Abdominal anatomy: solid organs (liver, kidneys, spleen), hollow viscus organs (stomach, duodenum, small and large intestine, rectum), bladder
- 2.1.16.1.4. Retroperitoneal anatomy: major vascular structures, duodenum, pancreas, kidneys, and ureters
- 2.1.16.1.5. Skeletal anatomy: bony pelvis, long bones of upper and lower extremities
- 2.1.16.1.6. Spine and spinal cord anatomy

2.1.16.2. Clinical conditions

2.1.16.2.1. Shock, including but not limited to hemorrhagic, obstructive, and neurogenic

2.1.16.2.2. Head injury

2.1.16.2.2.1. Traumatic brain injury and raised intracranial pressure (ICP)

2.1.16.2.2.2. Eye injuries

2.1.16.2.2.3. Facial injuries

2.1.16.2.3. Neck injury

2.1.16.2.3.1. Injuries to aerodigestive tract, including but not limited to emergency airway management

2.1.16.2.3.2. Injuries to the major blood vessels

2.1.16.2.4. Thoracic injury

2.1.16.2.4.1. Pneumothorax and tension pneumothorax

2.1.16.2.4.2. Hemothorax

2.1.16.2.4.3. Pulmonary contusion

2.1.16.2.4.4. Traumatic aortic tear

2.1.16.2.4.5. Hemopericardium secondary to penetrating trauma

2.1.16.2.4.6. Major airway injuries

2.1.16.2.4.7. Inhalation injuries

2.1.16.2.4.8. Esophageal injuries

2.1.16.2.5. Abdominal injury

2.1.16.2.5.1. Solid organ injuries

2.1.16.2.5.2. Hollow viscus injuries

2.1.16.2.5.3. Retroperitoneal injuries

2.1.16.2.5.4. Abdominal compartment syndrome

2.1.16.2.6. Musculoskeletal injury

2.1.16.2.6.1. Spine and spinal cord injuries

2.1.16.2.6.2. Pelvic fractures

2.1.16.2.6.3. Extremity injuries

2.1.16.2.6.4. Compartment syndromes

2.1.16.2.7. Vascular injury

- 2.1.16.2.8. Skin and soft tissue injury
 - 2.1.16.2.8.1. Chemical and thermal burns, and burn wound sepsis
 - 2.1.16.2.8.2. Blast injury
 - 2.1.16.2.8.3. Major skin and soft tissue loss
- 2.1.16.3. Trauma in special populations, including but not limited to pediatric, geriatric, and pregnant patients
- 2.1.16.4. Findings suggestive of non-accidental injury
- 2.1.17. Pediatric surgery
 - 2.1.17.1. Abdominal and pelvic anatomic differences compared to adults
 - 2.1.17.2. Physiological differences compared to adults, and the clinical consequences of these differences for the surgical care of children, including but not limited to responses to hypovolemia, physiologic stress, and surgical stress
 - 2.1.17.3. Gastrointestinal tract obstruction, including but not limited to pyloric stenosis, malrotation and volvulus, congenital bands, Hirschsprung's disease, foreign bodies, and intussusception
 - 2.1.17.4. Common mechanisms of pediatric trauma and common pediatric injury patterns
 - 2.1.17.5. Common pediatric neck masses
- 2.1.18. Minimally invasive surgery
 - 2.1.18.1. Equipment function, common equipment-related problems, and their solutions
 - 2.1.18.2. Applications, indications and contraindications of the minimally invasive surgical approach
 - 2.1.18.3. Effects of pneumoperitoneum on organ systems
 - 2.1.18.4. Effects of pneumoperitoneum on the pregnant patient and fetus
 - 2.1.18.5. Effects of pneumoperitoneum on poorly functioning organ systems
- 2.1.19. Palliative care
 - 2.1.19.1. Definition and goals of palliative care
 - 2.1.19.2. Role of surgery in the palliation of malignancy, including debulking, relief of gastro-intestinal obstruction and prevention of bleeding
 - 2.1.19.3. Central role of the patient and their family in discussions regarding palliative care
 - 2.1.19.4. Role of multidisciplinary planning in the care of the palliative patient

2.1.20. Nutrition

- 2.1.20.1. Normal requirements for calories, carbohydrates, fat, protein, vitamins, trace elements and minerals
- 2.1.20.2. Nutritional assessment techniques
- 2.1.20.3. Effects of trauma and illness on nutritional requirements
- 2.1.20.4. Indications for enteral and parenteral nutrition supplementation and their potential complications

2.2. Describe the CanMEDS framework of competencies relevant to General Surgery

2.3. Apply lifelong learning skills of the Scholar Role to implement a personal program to keep up to date and enhance areas of professional competence

2.4. Integrate the available best evidence and best practices to enhance the quality of care and patient safety in General Surgery

3. Perform a complete and appropriate assessment of a patient

3.1. Identify and effectively explore issues to be addressed in a patient encounter, including the patient's context and preferences

3.2. Elicit a history that is relevant, concise, and accurate to context and preferences for the purposes of diagnosis, management, health promotion, and disease prevention

3.3. Perform a focused physical examination that is relevant and accurate for the purposes of diagnosis, management, health promotion, and disease prevention

3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner

3.5. Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans

4. Use preventive and therapeutic interventions effectively

4.1. Implement a management plan in collaboration with a patient and the patient's family

4.2. Demonstrate appropriate and timely application of preventive interventions relevant to the surgeon's practice

4.2.1. Prevention of injury

4.2.1.1. Appropriate strategies to enhance patient and provider safety and reduce the risk of complications from surgical interventions

4.2.2. Selection and timing of immunization prior to splenectomy

4.2.3. Screening and surveillance for malignancies

4.2.4. Prophylactic use of anticoagulants

4.3. Demonstrate appropriate and timely application of therapeutic interventions relevant to the surgeon's practice. The surgeon must be able to provide non-operative management of patients presenting with a range of conditions. This non-operative management may include but is not limited to initial resuscitation, stabilization, selection of appropriate investigations, as well as arranging operative management, overseeing ongoing care, and organizing patient transfer as appropriate. For some of the conditions listed operative treatment will not be required

4.3.1. Resuscitation and stabilization

- 4.3.1.1. Principles of initial management as described by the Advanced Trauma Life Support (ATLS) program
- 4.3.1.2. Cervical spine stabilization
- 4.3.1.3. Management of the acutely ill patient, including but not limited to the diagnosis and treatment of shock and the acute abdomen, determining the need for operative intervention, and consulting other specialists as necessary
- 4.3.1.4. Resuscitation of the patient with multiple injuries, diagnosis and management of life-threatening injuries, triaging treatment priorities, and consultation of other specialists as necessary
- 4.3.1.5. Initiation of massive transfusion when appropriate
- 4.3.1.6. Triage of patients and determination of the need for immediate surgical intervention
- 4.3.1.7. Initial management of orthopedic injuries, including but not limited to stabilizing pelvic and long bone fractures, and assessing the neurovascular status of the limbs
- 4.3.1.8. Initial management of patients with soft tissue injuries, including burn injuries, with appropriate attention to triage, management of immediately life-threatening injuries, and transfer to appropriate care
- 4.3.1.9. Management of resuscitation and stabilization in pediatric trauma patients, including: establishment of intravenous or intraosseous access; provision of appropriate intravenous fluid resuscitation; determination of the need for blood transfusion; determination of the need for operative intervention locally or transfer to a pediatric centre; and application of the principles of non-operative management of solid organ injuries

4.3.2. Nonoperative management

4.3.2.1. Identification and management of patients whose condition may not require operative treatment but for whom it is appropriate that their care be overseen by a General Surgeon. This includes patients with the following conditions:

- 4.3.2.1.1. Inflammatory diseases of the skin, GI tract, and pancreas

- 4.3.2.1.2. Benign and malignant GI tract obstructions
- 4.3.2.1.3. Benign breast conditions
- 4.3.2.1.4. Nutritional deficiency states

- 4.3.2.2. Provision of non-operative management of traumatic injuries where appropriate

- 4.3.3. Endoscopy
 - 4.3.3.1. Appropriate monitoring of patients undergoing upper GI endoscopy or colonoscopy
 - 4.3.3.2. Use of medications to facilitate endoscopic procedures, including but not limited to sedatives, narcotic analgesics, and antispasmodic medications

- 4.3.4. Recognition and management of intraoperative and perioperative complications
 - 4.3.4.1. Perioperative complications related to pneumoperitoneum, including but not limited to acidosis, hypotension, hypoxia, and pneumothorax
 - 4.3.4.2. Perioperative complications of abdominal access, including but not limited to injuries to the abdominal viscera and blood vessels

- 4.4. Obtain appropriate informed consent for therapies
- 4.5. Ensure patients receive appropriate end-of-life care

5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic

The procedural skills of General Surgery include open procedures, minimally invasive surgery (MIS) procedures, and upper GIM endoscopy and colonoscopy MIS is an essential and evolving component of General Surgery and the specific choice of an open or MIS approach for a given procedure will depend on patient factors, the operating environment, and the skills and experience of the surgeon.

- 5.1. Demonstrate effective, appropriate, and timely performance of diagnostic procedures relevant to General Surgery
 - 5.1.1. Fine needle aspiration (FNA), core needle biopsy, as appropriate, and incisional biopsy, as appropriate, of lesions of the skin and soft tissues, lymph nodes, breast, liver, spleen, peritoneum, and omentum
 - 5.1.2. Punch biopsy of lesions of the skin and breast
 - 5.1.3. Excisional biopsy of skin, breast, soft tissue lesions and lymph nodes
 - 5.1.4. Sentinel lymph node biopsy for breast neoplasms and melanoma
 - 5.1.5. Diagnostic upper GI endoscopy and colonoscopy, which may include forceps biopsy

- 5.1.6. Lesional sampling for intraoperative pathology consultation
- 5.2. Demonstrate effective, appropriate, and timely performance of therapeutic procedures relevant to General Surgery
 - 5.2.1. Skills of minimally invasive surgery (MIS)
 - 5.2.1.1. Position patient to optimize patient safety and to facilitate access during MIS procedures
 - 5.2.1.2. Obtain safe access to the peritoneal cavity using open and closed techniques
 - 5.2.1.3. Appropriate port site selection, placement and closure
 - 5.2.1.4. Suture laparoscopically
 - 5.2.1.5. Achieve hemostasis

Surgical Procedures List A

On completion of training, General Surgery residents must have expert knowledge of the following procedures, including their indications, contra-indications, alternative treatment options, and more common complications. The graduate must be competent to independently perform these procedures and to provide appropriate perioperative care.

- 5.2.2. Esophagus
 - 5.2.2.1. Control of perforation
- 5.2.3. Stomach and duodenum
 - 5.2.3.1. Operative bypass for malignant or benign disease of the stomach or duodenum
 - 5.2.3.2. Insertion of percutaneous endoscopic gastrostomy and open gastrostomy tubes
 - 5.2.3.3. Operative treatment of the acute complications from bariatric surgery
 - 5.2.3.4. Operative treatment of bleeding from duodenal and gastric ulcers
 - 5.2.3.5. Operative treatment for complications from peptic ulcer disease
 - 5.2.3.6. Management of the difficult duodenal stump
 - 5.2.3.7. Bypass procedures for upper GI obstruction
 - 5.2.3.8. Wedge resection of the stomach or duodenum
 - 5.2.3.9. Partial or total gastrectomy for gastric neoplasms
 - 5.2.3.10. Operative treatment for gastric volvulus
- 5.2.4. Small intestine
 - 5.2.4.1. Operative management of small intestinal obstruction

- 5.2.4.2. Creation of loop and end ileostomies, and their reversal
- 5.2.4.3. Insertion of feeding jejunostomy tubes
- 5.2.4.4. Reduction of intussusception
- 5.2.4.5. Segmental resection of the small bowel with or without anastomosis
- 5.2.4.6. Performance of simple stricturoplasty
- 5.2.4.7. Performance of enteric bypass
- 5.2.4.8. Repair of lacerations and enterotomies
- 5.2.4.9. Repair of small intestinal fistulae
- 5.2.4.10. Removal of foreign bodies

- 5.2.5. Colon
 - 5.2.5.1. Resection with anastomosis of the intra-abdominal colon, including right, extended right, transverse, left, sigmoid, and total colectomies
 - 5.2.5.2. Appendectomy
 - 5.2.5.3. Diversion and defunctioning of the colon
 - 5.2.5.4. Hartmann's resection and reversal
 - 5.2.5.5. Repair of colonic fistulae, including but not limited to colovesical, colovaginal, and coloenteric fistulae
 - 5.2.5.6. On-table: colonic lavage as part of another colonic surgical procedure

- 5.2.6. Rectum and anus
 - 5.2.6.1. Diversion for benign or malignant ano-rectal disorders
 - 5.2.6.2. Management of acute and chronic hemorrhoidal disease
 - 5.2.6.3. Management of acute and chronic anal fissures
 - 5.2.6.4. Management of uncomplicated perianal and perirectal abscesses
 - 5.2.6.5. Management of uncomplicated anal fistulae
 - 5.2.6.6. Proctectomy and anastomosis for lesions in the upper and middle thirds of the rectum
 - 5.2.6.7. Abdominoperineal resection for benign or malignant diseases of the rectum or anus
 - 5.2.6.8. Management of rectal prolapse by abdominal approaches
 - 5.2.6.9. Removal of rectal foreign bodies
 - 5.2.6.10. Transanal resection of benign lesions

- 5.2.7. Hepatobiliary
 - 5.2.7.1. Wedge resection of the liver
 - 5.2.7.2. Cholecystectomy

- 5.2.7.3. Partial cholecystectomy
- 5.2.7.4. Common bile duct (CBD) exploration for choledocholithiasis
- 5.2.7.5. Cholecystostomy and tube decompression of the common bile duct for emergency management of severe infection

- 5.2.8. Pancreas
 - 5.2.8.1. Operative management of necrotizing pancreatitis
 - 5.2.8.2. Pancreatic cystogastrostomy

- 5.2.9. Spleen
 - 5.2.9.1. Splenectomy
 - 5.2.9.2. Ligation of a splenic artery aneurysm
 - 5.2.9.3. Operative management of cystic lesions of the spleen

- 5.2.10. Lymph nodes
 - 5.2.10.1. Axillary dissection (levels I and II)
 - 5.2.10.2. Sentinel lymph node biopsy for breast cancer and melanoma

- 5.2.11. Breast
 - 5.2.11.1. Cyst aspiration
 - 5.2.11.2. Incision and drainage of abscesses
 - 5.2.11.3. Major and minor duct excision
 - 5.2.11.4. Lumpectomy with or without localization
 - 5.2.11.5. Mastectomy, including segmental, subcutaneous, modified radical, skin sparing, and nipple sparing

- 5.2.12. Abdominal wall and hernia
 - 5.2.12.1. Repair of hernias of the abdominal wall, groin, and diaphragm
 - 5.2.12.2. Repair of abdominal wound dehiscence
 - 5.2.12.3. Management of abdominal compartment syndrome and open abdomen
 - 5.2.12.4. Management of the infected abdominal wall prosthesis

- 5.2.13. Skin and soft tissue
 - 5.2.13.1. Surgical drainage of superficial abscesses
 - 5.2.13.2. Repair of basic traumatic injuries
 - 5.2.13.3. Simple resection of benign tumours
 - 5.2.13.4. Simple resection of malignant tumours

- 5.2.13.5. Surgical debridement of complicated infections:
 - 5.2.13.5.1. Cellulitis and necrotizing soft tissue infections
- 5.2.13.6. Surgical treatment of uncomplicated pilonidal disease
- 5.2.13.7. Surgical treatment of uncomplicated hidradenitis suppurativa
- 5.2.14. Vascular
 - 5.2.14.1. Laparotomy, exposure of great vessels, and proximal and distal vessel control
 - 5.2.14.2. Provision of vascular access
- 5.2.15. Head and neck
 - 5.2.15.1. Tracheostomy
- 5.2.16. Trauma
 - 5.2.16.1. Establishment of a surgical airway
 - 5.2.16.2. Surgical exploration of penetrating neck injuries with control of major vascular injuries
 - 5.2.16.3. Insertion of chest tubes
 - 5.2.16.4. Resuscitative thoracotomy
 - 5.2.16.5. Trauma laparotomy, including exploration of retroperitoneal hematomas when indicated
 - 5.2.16.6. Damage control surgery for massive intra-abdominal hemorrhage or multiple intra-abdominal injuries
 - 5.2.16.7. Initial operative assessment of rectal trauma and diversion surgery, as required
 - 5.2.16.8. Decompressive laparotomy for abdominal compartment syndrome
 - 5.2.16.9. Management of the open abdomen
 - 5.2.16.10. Repair of bladder injuries
 - 5.2.16.11. Fasciotomy for limb compartment syndromes
- 5.2.17. Pediatric surgery
 - 5.2.17.1. Appendectomy in children over the age of two years
 - 5.2.17.2. Inguinal, umbilical and epigastric hernia repairs in children over the age of two years
 - 5.2.17.3. Laparotomy for acute abdomen in children over the age of two years
 - 5.2.17.4. Laparotomy for intestinal obstruction in children over the age of two years
 - 5.2.17.5. Incision and drainage of superficial abscesses

5.2.17.6. Excision of benign lesions of the skin and subcutaneous tissue

5.2.17.7. Management of ingrown toenails and pilonidal disease

5.2.18. Endoscopy

5.2.18.1. Upper GI endoscopy for hemostasis

5.2.18.2. Colonoscopy for hemostasis

5.2.18.3. Endoscopic polypectomy

5.2.18.4. Endoscopic foreign body removal

5.2.18.5. Insertion of feeding tubes

5.2.18.6. Management of complications of endoscopic procedures, including but not limited to perforation of the gastrointestinal tract, hemorrhage and infection

Surgical Procedures List B

On completion of training, General Surgery residents must understand the following procedures, including the indications, contra-indications, alternative treatment options, and more common complications. The graduate may be able to perform these procedures independently.

5.2.19. Esophagus

5.2.19.1. Esophageal dilation

5.2.19.2. Repair of esophageal perforation

5.2.19.3. Cricopharyngeal myotomy

5.2.19.4. Anti-reflux surgery

5.2.19.5. Heller myotomy

5.2.20. Stomach and duodenum

5.2.20.1. Extended procedures for locally advanced gastric cancer

5.2.21. Small intestine

5.2.21.1. Complex stricturoplasty

5.2.22. Rectum and anus

5.2.22.1. Low rectal cancer restorative procedures (specifically lower third and coloanal anastomoses)

5.2.22.2. Complex anal fistula repair

5.2.22.3. Rectal prolapse repairs requiring perineal approaches

5.2.22.4. Rectovaginal fistula repair

5.2.23. Hepatobiliary

- 5.2.23.1. Simple anatomical and non-anatomical liver resections
- 5.2.23.2. Marsupialization of simple liver cysts
- 5.2.23.3. Management of Echinococcal cysts
- 5.2.23.4. Biliary enteric bypass and bile duct repair below common hepatic duct (CHD) bifurcation

5.2.24. Pancreas

- 5.2.24.1. Distal pancreatectomy
- 5.2.24.2. Transduodenal biopsy of the pancreas

5.2.25. Spleen

- 5.2.25.1. Partial splenectomy

5.2.26. Lymph nodes

- 5.2.26.1. Axillary dissection level III
- 5.2.26.2. Inguinal lymph node dissection

5.2.27. Adrenal gland

- 5.2.27.1. Adrenalectomy

5.2.28. Abdominal wall and hernia

- 5.2.28.1. Management of a perineal hernia
- 5.2.28.2. Management of a ventral hernia with an enteroatmospheric fistula

5.2.29. Skin and soft tissue

- 5.2.29.1. Basic skin grafting
- 5.2.29.2. Basic skin and soft tissue flaps
- 5.2.29.3. Surgical treatment of complex pilonidal disease
- 5.2.29.4. Surgical treatment of complex hidradenitis suppurativa

5.2.30. Vascular

- 5.2.30.1. Lower extremity amputation
- 5.2.30.2. Arterial embolectomy
- 5.2.30.3. Emergency aortic aneurysm repair
- 5.2.30.4. Management of varicose veins

5.2.31. Head and neck

- 5.2.31.1. Thyroidectomy
- 5.2.31.2. Parathyroidectomy
- 5.2.31.3. Thyroglossal duct cyst excision
- 5.2.31.4. Lateral neck dissection
- 5.2.31.5. Central lymph node dissection
- 5.2.31.6. Treatment of ranulas and mucoceles

5.2.32. Trauma

- 5.2.32.1. Operative management of complex duodenal injuries
- 5.2.32.2. Operative management of complex pancreatic injuries
- 5.2.32.3. Operative management of cardiac injuries
- 5.2.32.4. Operative management of major vascular injuries
- 5.2.32.5. Operative management of renal injuries
- 5.2.32.6. Non-anatomic lung resection for trauma
- 5.2.32.7. Hemorrhage control in the chest for trauma
- 5.2.32.8. Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA)

5.2.33. Pediatric surgery

- 5.2.33.1. Pyloromyotomy
- 5.2.33.2. Circumcision
- 5.2.33.3. Minor oral surgical procedures, including but not limited to treatment of ranula, tongue tie, and mucocele

5.2.34. Endoscopy

- 5.2.34.1. Stenting
- 5.2.34.2. Dilation of strictures
- 5.2.34.3. Management of variceal bleeding

Surgical Procedures List C

On completion of training, General Surgery residents will be able to describe the principles of the following procedures, indications for referral, perioperative management, and complications. The graduate is not expected to be able to perform these procedures without further training.

5.2.35. Esophagus

- 5.2.35.1. Re-do antireflux surgery
- 5.2.35.2. Esophagectomy

5.2.36. Stomach and duodenum

- 5.2.36.1. Bariatric surgical procedures
- 5.2.36.2. Duodenal resections

5.2.37. Rectum and anus

- 5.2.37.1. Operative treatment of recurrent rectal cancer
- 5.2.37.2. Resection of presacral and retrorectal tumors
- 5.2.37.3. Rectocele repair or local procedures for obstructed defecation
- 5.2.37.4. Transanal minimally invasive resection
- 5.2.37.5. Operative treatment for fecal incontinence
- 5.2.37.6. Construction of ileal pouch with ileoanal anastomosis

5.2.38. Hepatobiliary

- 5.2.38.1. Complex anatomical and non-anatomical liver resections
- 5.2.38.2. Biliary tract bypass and repair above the CHD bifurcation
- 5.2.38.3. Biliary tract resection above and below the CHD bifurcation with reconstruction
- 5.2.38.4. Resection of intrapancreatic bile duct and ampulla
- 5.2.38.5. Biliary sphincterotomy/sphincteroplasty

5.2.39. Pancreas

- 5.2.39.1. Pancreaticoduodenectomy
- 5.2.39.2. Pancreatic duct drainage procedures

5.2.40. Lymph nodes

- 5.2.40.1. Neck dissections (functional and radical)
- 5.2.40.2. Surgical management of a chyle leak

5.2.41. Breast

- 5.2.41.1. Post-mastectomy reconstruction

5.2.42. Adrenal gland

- 5.2.42.1. En-bloc resection of the adrenal gland and adjacent structures for invasive malignant lesions of the adrenal gland
- 5.2.42.2. Regional lymphadenectomy for malignant adrenal neoplasms

5.2.43. Skin and soft tissue

5.2.43.1. Advanced skin grafting

5.2.43.2. Advanced skin and soft tissue flaps

5.2.43.3. Complex excision and reconstruction for benign and malignant tumours

5.2.44. Head and neck

5.2.44.1. Lateral neck dissection

5.2.44.2. Parotidectomy

5.2.44.3. Major salivary gland excision

5.2.44.4. Laryngectomy

5.2.45. Oncology

5.2.45.1. Cytoreduction surgery plus heated chemotherapy for carcinomatosis

5.2.45.2. Resection of sarcoma

5.2.46. Endoscopy

5.2.46.1. Endoscopic ultrasound

5.2.46.2. Endoscopic retrograde cholangiopancreatography (ERCP)

5.2.46.3. Advanced endoscopic procedures, including but not limited to endoscopic mucosal resection and ablative therapies

5.3. Obtain appropriate informed consent for procedures

5.4. Document and disseminate information related to procedures performed and their outcomes

5.5. Ensure adequate followup is arranged for procedures performed

6. Seek appropriate consultation from other health professionals, recognizing the limits of their own expertise

6.1. Demonstrate insight into their own limits of expertise

6.2. Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care

6.3. Arrange appropriate followup care services for patients and their families

7. Contribute, as an individual and as a member of a team providing care, to the continuous improvement of health care quality and patient safety

7.1. Recognize and respond to harm from health care delivery, including patient safety incidents

- 7.2. Adopt strategies that promote patient safety and address human and system factors

Communicator

Definition:

As *Communicators*, General Surgeons effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

Key and Enabling Competencies: General Surgeons are able to...

- 1. Develop rapport, trust, and ethical therapeutic relationships with patients and families**
 - 1.1. Recognize that being a good communicator is a core clinical skill for physicians, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence, and improved clinical outcomes
 - 1.2. Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy
 - 1.3. Respect patient privacy, confidentiality, and autonomy
 - 1.4. Listen effectively
 - 1.5. Be aware of and responsive to nonverbal cues
 - 1.6. Facilitate a structured clinical encounter effectively

- 2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals**
 - 2.1. Gather information about a disease and about a patient's beliefs, concerns, expectations, and illness experience
 - 2.2. Seek out and synthesize relevant information from other sources, such as a patient's family and other professionals, while respecting individual privacy and confidentiality
 - 2.3. Obtain information accurately and effectively under time constraints, such as before emergency operations

- 3. Convey relevant information and explanations accurately to patients and families, colleagues and other professionals**
 - 3.1. Deliver information to a patient and family, colleagues, and other professionals in a humane manner and in such a way that it is understandable and encourages discussion and participation in decision-making
 - 3.1.1. Use appropriate language and terminology to optimize patient and family understanding and enhance patient dignity

- 3.1.2. Explain the indications, risks and benefits of operative procedures, and alternative treatment options
- 3.1.3. Provide appropriate and accurate, clinical imaging and intraoperative information on the pathology specimen requisition

4. Develop a common understanding on issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care

- 4.1. Identify and effectively explore problems to be addressed from a patient encounter, including the patient's context, responses, concerns, and preferences
- 4.2. Present and discuss treatment options, including nonoperative, radiological, and endoscopic measures
- 4.3. Respect diversity and differences, including but not limited to the impact of gender, religion, and cultural beliefs on decision-making
- 4.4. Encourage discussion, questions, and interaction in the encounter
- 4.5. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care
- 4.6. Address challenging communication issues effectively, including but not limited to obtaining informed consent, delivering bad news, and addressing anger, confusion, and misunderstanding
 - 4.6.1. Obtain informed consent for surgical procedures, recognizing the specific challenges arising in emergency situations and when patient capacity to provide consent is limited because of age, mental status or other conditions
 - 4.6.2. Identify opportunities for advance care planning discussions and explore patient's values, wishes and preferences related to end-of life-care
 - 4.6.2.1. Discuss and establish goals of care and resuscitation preferences and periodically review when changes occur
 - 4.6.2.2. Discuss settings for end-of-life care, including home, hospice, palliative care units, and hospital
 - 4.6.3. Discuss autopsy and organ donation when appropriate

5. Convey oral, written, and/or electronic information effectively about a medical encounter

- 5.1. Maintain clear, concise, accurate, and appropriate records of clinical encounters and plans
 - 5.1.1. Provide well-organized and legible orders, progress notes, and operative notes in a timely manner
 - 5.1.2. Prepare appropriate operative reports ensuring that copies are sent to family physicians and other consultant specialists in a timely manner

- 5.1.3. Complete concise hospital discharge summaries ensuring that copies are sent to family physicians and other consultant specialists in a timely manner
 - 5.1.4. Prepare appropriate consultation letters outlining plans for further investigations, treatment, and followup ensuring that copies are sent to family physicians and other consultant specialists in a timely manner
 - 5.1.5. Document advance care planning and goals of care discussions
 - 5.2. Document the process of informed consent for operative and other interventions
 - 5.3. Present oral reports of clinical encounters and plans
 - 5.3.1. Provide relevant information to family physicians, other consultant specialists, and other health care professionals outlining your clinical assessment and plans to facilitate their participation in the care of the patient
 - 5.4. Convey medical information appropriately to ensure safe transfer of care
- 6. Present medical information effectively to the public or media about a medical issue**

Collaborator

Definition:

As *Collaborators*, General Surgeons work effectively within a health care team to achieve optimal patient care.

Key and Enabling Competencies: General Surgeons are able to...

- 1. Participate effectively and appropriately in an interprofessional health care team**
 - 1.1. Describe the roles and responsibilities of the General Surgeon to other professionals
 - 1.2. Describe the roles and responsibilities of other professionals within the health care team
 - 1.3. Recognize and respect the diverse roles, responsibilities, and competencies of other professionals in relation to their own
 - 1.4. Work with others to assess, plan, provide, and integrate care for individuals and groups of patients
 - 1.5. Work collaboratively in other activities and tasks; examples are research, educational work, program review, and/or administrative responsibilities
 - 1.6. Participate in interprofessional team meetings

- 1.7. Enter into interdependent relationships with other professions for the provision of quality care
- 1.8. Describe the principles of team dynamics
- 1.9. Respect team ethics, including confidentiality, resource allocation, and professionalism
- 1.10. Demonstrate leadership in a health care team, as appropriate
 - 1.10.1. Assume the role of Trauma Team Leader, as appropriate, to oversee the care of the patient with multiple injuries

2. Work with others effectively to plan and care for patients

- 2.1. Work with others to assess and plan care of specific populations of patients
 - 2.1.1. Participate in the multidisciplinary management of cancer patients
 - 2.1.2. Lead the multidisciplinary care of critically ill patients effectively, including those with multiple trauma
 - 2.1.3. Seek appropriate input from colleagues in planning treatment
 - 2.1.4. Collaborate with nursing, social work, spiritual care and other health care providers to provide an integrated palliative approach to care
- 2.2. Work with other members of the operating team to provide safe and effective care for patients
 - 2.2.1. Participate and lead where appropriate in a pause or checklist immediately before incision
 - 2.2.2. Communicate clearly and concisely with all operating team members in the operating room
 - 2.2.3. Request and provide intra-operative consultations, when appropriate
 - 2.2.4. Work with operating team members to transfer patients and their relevant information safely to postoperative care providers
- 2.3. Interact with colleagues to optimize the quality of postoperative medical care
 - 2.3.1. Utilize the expertise and availability of those involved in pain management to optimize postoperative pain control
 - 2.3.2. Consult and work with experts in critical care and other disciplines, including other health professionals
- 2.4. Utilize interprofessional expertise and community resources to facilitate appropriate and effective patient discharge
- 2.5. Involve appropriate team members in end of life care for patients and their families

3. Work with other health professionals effectively to prevent, negotiate, and resolve interprofessional conflict

- 3.1. Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team
- 3.2. Work with other professionals to prevent conflicts
- 3.3. Respect differences and the scopes of practice of other professions
- 3.4. Reflect on their own differences, misunderstandings, and limitations that may contribute to interprofessional tension
- 3.5. Reflect on interprofessional team function
- 3.6. Employ collaborative negotiation to resolve conflicts and address misunderstandings

Manager

Definition:

As *Managers*, General Surgeons are integral participants in health care organizations, organizing sustainable practices, making decisions concerning the allocation of resources, and contributing to the effectiveness of the health care system.

Key and Enabling Competencies: General Surgeons are able to...

1. Participate in activities that contribute to the effectiveness of their health care organizations and systems

- 1.1. Work collaboratively with others in their organizations
- 1.2. Participate in systemic quality process evaluation and improvement, including patient safety initiatives
 - 1.2.1. Participate in regular reviews of patient complications and deaths
- 1.3. Describe the structure and function of the health care system as it relates to General Surgery, including the roles of physicians
- 1.4. Describe the principles of health care financing, including surgeon remuneration, budgeting, and organizational funding
- 1.5. Understand the different models of palliative care delivery and the complementary roles of a surgeon and palliative care specialist

2. Manage their practice and career effectively

- 2.1. Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life
- 2.2. Manage a practice, including finances and human resources

- 2.3. Implement processes to ensure personal practice improvement
 - 2.3.1. Maintain an electronic record of operative procedures performed and of treatment complications as well as surgical complications
- 2.4. Employ information technology appropriately for patient care

3. Allocate finite health care resources appropriately

- 3.1. Demonstrate an understanding of the importance of just allocation of health care resources, balancing effectiveness, efficiency, and access with optimal patient care
 - 3.1.1. Triage patients appropriately for emergent, urgent, and elective care
 - 3.1.2. Triage patients appropriately for intraoperative pathology consultations
- 3.2. Apply evidence and management processes for cost-appropriate care
 - 3.2.1. Ensure that investigations, therapies, and operative procedures are chosen based on the best evidence available

4. Serve in administration and leadership roles

- 4.1. Participate effectively in committees and meetings
- 4.2. Lead or implement change in health care
- 4.3. Plan relevant elements of health care delivery, such as work schedules

Health Advocate

Definition:

As *Health Advocates*, General Surgeons use their expertise and influence responsibly to advance the health and well-being of individual patients, communities, and populations.

Key and Enabling Competencies: General Surgeons are able to...

1. Respond to individual patient health needs and issues as part of patient care

- 1.1. Identify the health needs of an individual patient
 - 1.1.1. Establish priorities for the care of individual patients whose needs compete with others for scarce resources
 - 1.1.2. Identify the health needs of a patient with an advanced illness
 - 1.1.3. Recognize the responsibility to forgo treatments that are futile
 - 1.1.4. Develop a proactive approach to managing patient expectations and needs through the course of their illness

- 1.2. Identify opportunities for advocacy, health promotion, and disease prevention with individuals to whom they provide care
 - 1.2.1. Identify opportunities for screening, including colon and breast cancer
 - 1.2.2. Promote smoking cessation and be aware of available resources
 - 1.2.3. Advise patients against high risk behaviours such as drinking and driving
 - 1.2.4. Identify families at risk for cancer
- 1.3. Demonstrate an appreciation of the possibility of competing interests between advocacy for an individual and the community at large

2. Respond to the health needs of the communities that they serve

- 2.1. Describe the practice communities that they serve
 - 2.1.1. Demonstrate an understanding that community needs are affected by determinants of health such as poverty, illiteracy, language and attitudes towards surgery
 - 2.1.2. Adapt available resources to community needs
 - 2.1.3. Describe the societal, environmental, and resource allocation factors relevant to the care of the dying
- 2.2. Identify opportunities for advocacy, health promotion, and disease prevention in communities that they serve and respond appropriately, such as encouraging organ donation and road safety
- 2.3. Demonstrate an appreciation of the possibility of competing interests between the communities served and other populations
- 2.4. Describe the role of specialty societies and other associations which advocate for patients well-being

3. Identify the determinants of health for the populations that they serve

- 3.1. Identify the determinants of health of the population, including barriers to access to care and resources
- 3.2. Identify vulnerable or marginalized populations within those served and respond appropriately

4. Promote the health of individual patients, communities, and populations

- 4.1. Describe an approach to implementing a change in a determinant of health of a population they serve
- 4.2. Describe how public policy impacts on the health of the populations served
- 4.3. Identify points of influence in the health care system and its structure
- 4.4. Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism

- 4.5. Demonstrate an appreciation of the possibility of conflict inherent in their role as a health advocate for a patient or community with that of manager or gatekeeper
- 4.6. Describe the role of the medical profession in advocating collectively for health and patient safety

Scholar

Definition:

As *Scholars*, General Surgeons demonstrate a lifelong commitment to reflective learning, and the creation, dissemination, application, and translation of medical knowledge.

Key and Enabling Competencies: General Surgeons are able to...

1. Maintain and enhance professional activities through ongoing learning

- 1.1. Describe the principles of maintenance of competence
- 1.2. Describe principles and strategies for implementing a personal knowledge management system
- 1.3. Recognize and reflect on learning issues in practice
- 1.4. Recognize and reflect on surgical outcomes, including complications, and other learning opportunities in practice
- 1.5. Conduct personal practice audits, including the processes and outcomes of operations and other components of care
- 1.6. Pose an appropriate learning question
 - 1.6.1. Identify clinical questions in General Surgery
 - 1.6.2. Recognize and identify gaps in knowledge and expertise around the question
- 1.7. Access and interpret the relevant evidence
- 1.8. Integrate new learning into practice
- 1.9. Evaluate the impact of any change in practice, such as adopting new techniques and technologies
- 1.10. Document the learning process

2. Critically evaluate medical information and its sources and apply this appropriately to practice decisions

- 2.1. Describe the principles of critical appraisal
- 2.2. Critically appraise retrieved evidence in order to address a clinical question
- 2.3. Integrate critical appraisal conclusions into clinical care

3. Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others

- 3.1. Describe principles of teaching and learning relevant to medical education
- 3.2. Identify collaboratively the learning needs and desired learning outcomes of others
- 3.3. Select effective teaching strategies and content to facilitate others' learning within and outside of the operating room
- 3.4. Deliver effective lectures or presentations
- 3.5. Assess and reflect on teaching encounters
- 3.6. Provide effective feedback
- 3.7. Describe the principles of ethics with respect to teaching

4. Contribute to the development, dissemination, and translation of new knowledge and practices

- 4.1. Describe the principles of research and scholarly inquiry
- 4.2. Describe the principles of research ethics
- 4.3. Pose a scholarly question
- 4.4. Conduct a systematic search for evidence
- 4.5. Select and apply appropriate methods to address the question
- 4.6. Disseminate the findings of a study
- 4.7. Participate in a scholarly research, quality assurance, or educational project relevant to General Surgery, demonstrating primary responsibility for at least one of the following elements of the project:
 - 4.7.1. Development of the hypothesis, which must include a comprehensive literature review
 - 4.7.2. Development of the protocol for the scholarly project
 - 4.7.3. Preparation of a grant application
 - 4.7.4. Development of the research ethics proposal
 - 4.7.5. Synthesis and interpretation of the results

Professional

Definition:

As *Professionals*, General Surgeons are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour.

Key and Enabling Competencies: General Surgeons are able to...

1. Demonstrate a commitment to their patients, profession, and society through ethical practice

- 1.1. Exhibit appropriate professional behaviours in practice, including honesty, integrity, commitment, compassion, respect, and altruism
- 1.2. Demonstrate a commitment to delivering the highest quality care and maintenance of competence
 - 1.2.1. Accept responsibility for the overall care of the surgical patient
 - 1.2.2. Demonstrate ongoing commitment to a patient and their family at the end of life
- 1.3. Recognize and appropriately respond to ethical issues encountered in practice
 - 1.3.1. Disclose adverse events and outcomes openly and honestly
 - 1.3.2. Describe the principles of biomedical ethics
 - 1.3.3. Apply the principles of autonomy, beneficence, non-maleficence, and justice to surgical decision making
- 1.4. Identify, declare, and manage perceived, potential, and actual conflicts of interest
- 1.5. Recognize the principles and limits of patient privacy and confidentiality, as defined by the law and professional practice standards
- 1.6. Maintain appropriate boundaries with patients

2. Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation and improvement

- 2.1. Demonstrate knowledge and understanding of professional, legal, and ethical codes of practice
- 2.2. Fulfil the regulatory and legal obligations required of current practice
 - 2.2.1. Describe the principles of medical jurisprudence
 - 2.2.2. Demonstrate awareness of the legal duty to report any case suspicious for non-accidental injury to appropriate authorities
- 2.3. Demonstrate accountability to professional regulatory bodies

- 2.4. Recognize and respond appropriately to others' unprofessional behaviours in practice
- 2.5. Participate in peer review of the processes and outcomes of medical and surgical care

3. Demonstrate a commitment to surgeon health and sustainable practice

- 3.1. Balance personal and professional priorities to ensure personal health and a sustainable practice
 - 3.1.1. Demonstrate self-awareness of professional limitations
 - 3.1.2. Recognize and manage occupational health risks from disease transmission, substance abuse, fatigue and overwork
 - 3.1.3. Prevent, recognize and manage personal health impairment that may affect surgical competence
 - 3.1.4. Recognize and manage stress from caring for sick or dying patients
- 3.2. Strive to heighten personal and professional awareness and insight
- 3.3. Recognize other professionals in need and respond appropriately

4. Recognize the importance of role modeling

- 4.1. Act as positive role models for colleagues, trainees and other health professionals
- 4.2. Reflect positively the role of general surgeons in society

This document is to be reviewed by the Specialty Committee in General Surgery by December 2018.

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