

GENERAL SURGERY RESIDENCY

Curriculum Outline

*Patient Care and
Medical Knowledge*

2010-2011



SURGICAL COUNCIL ON
RESIDENT EDUCATION

www.surgicalcore.org

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**Patient Care
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AN INTRODUCTION TO THIS DOCUMENT

In recent years, there has been a call for a better defined curriculum in general surgery residency training. An important starting point for curriculum development is to answer the question “What do we expect our residents to know and be able to do at the end of their training?” As described by the Accreditation Council on Graduate Medical Education, we expect our graduating residents to be competent in medical knowledge, patient care and professionalism, among others. In 2004 the General Surgery Residency Committee of the American Board of Surgery (ABS) began to develop a curriculum in general surgery patient care by delineating the specific patient care competencies that they expected of graduating general surgery residents. An expert consensus process was used to develop this document, with significant input from the Association of Program Directors in Surgery (APDS) as well as specialty societies.

The patient care competency was chosen as the subject for initial curriculum development because many groups involved in surgical education felt this area was the most in need of definition and attention. The first version of the patient care curriculum outline was published in the 2008-2009 academic year and a revised version was printed for 2009-2010. For 2010-2011, we have added an outline of topics for the medical knowledge competency. The topics in the medical knowledge domain are clinically oriented, but they differ from the patient care topics in that they apply to the body as a whole rather than specific organ systems or diseases. SCORE recommends that all residents develop proficiency in these areas of medical knowledge.

The enclosed outline of the patient care and medical knowledge portions of the SCORE curriculum is the first step in curriculum development, not a full curriculum. A full curriculum includes educational content, teaching materials and assessment. SCORE and its member organizations are continuing to develop the SCORE General Surgery Resident Curriculum Portal (portal.surgicalcore.org) for the delivery of

instructional content and assessment in support of the patient care curriculum. The website also contains specific performance objectives and educational materials for the medical knowledge topics.

This patient care and medical knowledge curriculum outline has been approved as the basis for full curriculum development by the ABS and SCORE.

EXPLANATION OF THE CURRICULUM OUTLINE

This document contains a listing of the patient care topics to be included in a curriculum for a five-year general surgical residency training program. It also specifies in general terms the depth and breadth of training that is expected for each.

To care for the surgical patient, it is necessary to master knowledge related to specific diseases and operations, but also knowledge of systems and conditions that affect the body as a whole, such as septicemia or coagulopathy. The topics in the medical knowledge portion of the SCORE curriculum are generally of this variety, as well as topics of a general nature such as biostatistics and technical aspects of minimally invasive surgery. The 78 medical knowledge topics are organized into 13 subject matter categories. Each topic will have a module devoted to it on the portal with objectives, reading material and questions.

This document will serve as the basis for the SCORE curriculum. SCORE, with the extensive involvement of the APDS Curriculum Committee, is developing specific learning objectives for each topic. Instructional materials are then identified or developed to support the teaching of that topic. It will also be necessary to develop assessment tools to determine if residents have actually acquired the desired knowledge and skills, and finally the effectiveness of the entire program will have to be regularly evaluated. When all of these have been accomplished, there will be a complete curriculum.

This document should not be viewed as static. It will be reviewed annually to introduce new topics as needed, delete obsolete topics, or change the depth and breadth of existing topics.

CLASSIFICATION SYSTEM

The patient care curriculum topics are organized into 28 organ system-based categories. Within each category are diseases/conditions as well as operations/procedures.

The topics are stratified as follows:

Diseases/Conditions

Two levels:

- **BROAD** – A graduate should be able to care for all aspects of disease and provide comprehensive management.
- **FOCUSED** – A graduate should be able to make the diagnosis, provide initial management/stabilization, but will not be expected to be able to provide comprehensive management.

Operations/Procedures

Three levels:

- **ESSENTIAL – COMMON** – Frequently performed operations in general surgery; specific procedure competency is required by end of training (and should be attainable primarily by case volume).
- **ESSENTIAL – UNCOMMON** – Rare, often urgent, operations seen in general surgery practice but not typically done in significant numbers by trainees; specific procedure competency required by end of training (but cannot be attained by case volume alone).
- **COMPLEX** – Not consistently performed by general surgeons in training and not typically performed in general surgery practice. Generic experience in complex procedures is required but not competence in individual procedures. Some residency programs may provide sufficient experience for competence in specific procedures.

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CATEGORY 1: ABDOMEN – GENERAL

Diseases/Conditions

BROAD

- Acute abdominal pain
- Intra-abdominal abscess
- Rectus sheath hematoma
- Mesenteric cyst

FOCUSED

- Chronic abdominal pain
- Carcinomatosis
- Pseudomyxoma peritonei
- Spontaneous bacterial peritonitis
- Desmoid tumors
- Chylous ascites
- Retroperitoneal fibrosis

Operations/Procedures

ESSENTIAL – COMMON

- Insertion peritoneal dialysis catheter
- Diagnostic laparoscopy
- Open exploratory laparotomy

ESSENTIAL – UNCOMMON

- Open drainage abdominal abscess

COMPLEX

- Open retroperitoneal lymph node dissection
- Laparoscopic retroperitoneal lymph node dissection
- Operation for pseudomyxoma

CATEGORY 2: ABDOMEN – HERNIA

Diseases/Conditions

BROAD

- Inguinal hernia
- Femoral hernia
- Ventral hernia
- Miscellaneous hernias

Operations/Procedures

ESSENTIAL – COMMON

- Open repair of inguinal and femoral hernia
- Laparoscopic repair of inguinal and femoral hernia
- Open repair of ventral hernia
- Laparoscopic repair of ventral hernia

ESSENTIAL – UNCOMMON

- Repair miscellaneous hernias

COMPLEX

- Component separation abdominal wall reconstruction

CATEGORY 3: ABDOMEN – BILIARY

Diseases/Conditions

BROAD

- Jaundice
- Cholangitis
- Acute cholecystitis
- Chronic cholecystitis
- Choledocholithiasis
- Biliary pancreatitis
- Acalculous cholecystitis and biliary dyskinesia
- Iatrogenic bile duct injury
- Gallstone ileus
- Gallbladder polyps
- Gallbladder cancer (incidental)

FOCUSED

- Gallbladder cancer
- Cancer of the bile ducts
- Choledochal cyst
- Sclerosing cholangitis
- Ampullary stenosis/sphincter of Oddi dysfunction

Operations/Procedures

ESSENTIAL – COMMON

- Open cholecystectomy with or without cholangiography
- Laparoscopic cholecystectomy with or without cholangiography

ESSENTIAL – UNCOMMON

- Cholecystostomy
- Open common bile duct exploration
- Choledochoscopy
- Choledochoenteric anastomosis
- Operation for gallbladder cancer (when found incidentally)
- Repair acute common bile duct injury

COMPLEX

- Laparoscopic common bile duct exploration

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CATEGORY 3: ABDOMEN – BILIARY

COMPLEX (CONT.)

- Operation for gallbladder cancer (planned)
- Operation for bile duct cancer
- Excision choledochal cyst
- Transduodenal sphincteroplasty

CATEGORY 4: ABDOMEN – LIVER

Diseases/Conditions

BROAD

- Liver mass - evaluation
- Hepatic abscess

FOCUSED

- Hepatic adenoma
- Focal nodular hyperplasia
- Hemangioma
- Hepatocellular carcinoma
- Cholangiocarcinoma
- Metastatic tumors
- Miscellaneous hepatic neoplasms
- Ascites
- Bleeding esophageal varices
- Hepatic failure and encephalopathy
- Hepatorenal syndrome
- Viral hepatitis (occupational risk)
- Budd-Chiari syndrome

Operations/Procedures

ESSENTIAL – COMMON

- Open liver biopsy
- Laparoscopic liver biopsy

ESSENTIAL – UNCOMMON

- Drainage liver abscess

COMPLEX

- Open segmentectomy/lobectomy
- Laparoscopic segmentectomy/lobectomy
- Intraoperative ultrasound of liver
- Portal-systemic shunt

CATEGORY 5: ABDOMEN – PANCREAS

Diseases/Conditions

BROAD

- Pancreatic abscess and infected necrosis
- Pancreatic pseudocyst

FOCUSED

- Autoimmune pancreatitis
- Chronic pancreatitis, including hereditary pancreatitis
- Pancreatic insufficiency
- Ductal adenocarcinoma
- Acinar cell carcinoma
- Cystic neoplasms
- Intraductal papillary mucinous neoplasms
- Other periampullary neoplasms
- Gastrinoma and Z-E syndrome
- Insulinoma
- VIPoma
- Glucagonoma
- Somatostatinoma
- Nonfunctional endocrine tumors
- Lymphoma of pancreas

Operations/Procedures

COMPLEX

- Laparoscopic/endoscopic pancreatic debridement for necrosis
- Pancreaticoduodenectomy
- Total pancreatectomy
- Ampullary resection for tumor
- Distal pancreatectomy
- Longitudinal pancreaticojejunostomy
- Frey procedure
- Beger procedure
- Intraoperative pancreatic ultrasound
- Open pancreatic debridement for necrosis
- Drainage pancreatic pseudocyst

CATEGORY 6: ABDOMEN – SPLEEN

Diseases/Conditions

BROAD

- Postsplenectomy sepsis
- Splenic abscess

FOCUSED

- Hemolytic anemias
- Idiopathic thrombocytopenic purpura
- Secondary hypersplenism and splenomegaly
- Neoplasms of spleen
- Splenic cysts

Operations/Procedures

ESSENTIAL – COMMON

- Open splenectomy
- Laparoscopic splenectomy

ESSENTIAL – UNCOMMON

- Partial splenectomy/splenorrhaphy

CATEGORY 7: ALIMENTARY TRACT – ESOPHAGUS

Diseases/Conditions

BROAD

- Gastroesophageal reflux and Barrett's esophagus
- Hiatal hernia
- Dysphagia
- Spontaneous esophageal perforation
- Iatrogenic esophageal perforation
- Mallory-Weiss syndrome
- Stricture

FOCUSED

- Achalasia
- Zenker's diverticulum
- Epiphrenic diverticulum
- Foreign bodies
- Schatzki's ring
- Chemical burns
- Benign neoplasms
- Adenocarcinoma
- Squamous cell carcinoma
- Diffuse esophageal spasm
- Nutcracker esophagus
- Presbyesophagus
- Scleroderma connective tissue disorders

Operations/Procedures

ESSENTIAL – COMMON

- Laparoscopic antireflux procedure

ESSENTIAL – UNCOMMON

- Open antireflux procedure
- Open repair of paraesophageal hernia
- Laparoscopic repair of paraesophageal hernia
- Repair/resection of perforated esophagus

COMPLEX

- Total esophagectomy
- Esophagogastrectomy
- Cricopharyngeal myotomy with excision
Zenker's diverticulum
- Open Heller myotomy
- Laparoscopic Heller myotomy
- Collis gastroplasty

CATEGORY 8: ALIMENTARY TRACT – STOMACH

Diseases/Conditions

BROAD

- Upper gastrointestinal bleeding
- Gastric carcinoma
- Duodenal ulcer
- Gastric ulcer
- Peptic ulcer disease with bleeding
- Peptic ulcer disease with perforation
- Peptic ulcer disease with obstruction
- Gastric polyps
- Gastric lymphoma
- Gastric carcinoid tumor
- Stress gastritis

FOCUSED

- Morbid obesity
- Bezoars and foreign bodies
- Gastroparesis
- Postgastrectomy syndromes

Operations/Procedures

ESSENTIAL – COMMON

- Percutaneous endoscopic gastrostomy
- Open gastrostomy

ESSENTIAL – UNCOMMON

- Partial/total gastrectomy
- Repair duodenal perforation
- Truncal vagotomy and drainage

COMPLEX

- Open operation for morbid obesity
- Laparoscopic operation for morbid obesity
- Laparoscopic gastric resection
- Proximal gastric vagotomy
- Revisional procedures for postgastrectomy syndromes

CATEGORY 9: ALIMENTARY TRACT – SMALL INTESTINE

Diseases/Conditions

BROAD

- Small bowel obstruction and ileus
- Emergent management of Crohn's disease of small intestine
- Acute mesenteric ischemia: arterial, venous, and nonocclusive
- Meckel's diverticulum
- Radiation enteritis
- Small intestinal polyps
- Small intestinal adenocarcinoma
- Small intestinal lymphoma
- Small intestinal carcinoid tumor
- Small intestinal GISTs
- Intussusception
- Pneumatosis cystoides intestinalis
- Enterocutaneous fistula

FOCUSED

- Short bowel syndrome
- Enteric infections and blind loop syndrome

Operations/Procedures

ESSENTIAL – COMMON

- Open small bowel resection
- Open adhesiolysis
- Laparoscopic adhesiolysis
- Ileostomy
- Ileostomy closure
- Open feeding jejunostomy
- Laparoscopic feeding jejunostomy

ESSENTIAL – UNCOMMON

- Superior mesenteric artery embolectomy/thrombectomy

COMPLEX

- Strictureplasty for Crohn's disease

CATEGORY 10: ALIMENTARY TRACT – LARGE INTESTINE

Diseases/Conditions

BROAD

- Lower gastrointestinal bleeding
- Large bowel obstruction
- Acute appendicitis
- Diverticulitis
- Diverticular bleeding
- Diverticular fistulae
- Colonic polyps
- Colonic cancer
- Emergent management of ulcerative colitis
- Emergent management of Crohn's disease of colon
- Volvulus
- Miscellaneous colonic neoplasms
- Appendiceal neoplasms
- Emergent management of indeterminate colitis
- Ischemic colitis
- Antibiotic-induced colitis

FOCUSED

- Endometriosis
- Irritable bowel syndrome
- Functional constipation
- Infectious colitis

Operations/Procedures

ESSENTIAL – COMMON

- Open appendectomy
- Laparoscopic appendectomy
- Open partial colectomy
- Laparoscopic partial colectomy
- Colostomy
- Colostomy closure

ESSENTIAL – UNCOMMON

- Subtotal colectomy with ileorectal anastomosis/ileostomy

COMPLEX

- Total proctocolectomy and ileoanal pull-through

CATEGORY 11: ALIMENTARY TRACT – ANORECTAL

Diseases/Conditions

BROAD

- Hemorrhoids
- Anal fissure
- Anorectal abscess and fistulae
- Rectal cancer
- Anal cancer

FOCUSED

- Pelvic floor dysfunction
- Incontinence
- Anal dysplasia/sexually-transmitted disease
- Rectal prolapse

Operations/Procedures

ESSENTIAL – COMMON

- Banding for internal hemorrhoids
- Hemorrhoidectomy
- Subcutaneous lateral internal sphincterotomy
- Drainage anorectal abscess
- Anal fistulotomy/seton placement

ESSENTIAL – UNCOMMON

- Excision of anal cancer

COMPLEX

- Stapled hemorrhoidectomy
- Repair complex anorectal fistulae
- Operation for incontinence/constipation
- Open transabdominal operation for rectal prolapse
- Laparoscopic transabdominal operation for rectal prolapse
- Perineal operation for rectal prolapse
- Transanal resection for tumor
- Abdominoperineal resection
- Pelvic exenteration for rectal cancer
- Operation for anal cancer

CATEGORY 12: ENDOSCOPY

Operations/Procedures

ESSENTIAL – COMMON

- Esophagogastroduodenoscopy
- Proctoscopy
- Colonoscopy with or without biopsy/polypectomy
- Bronchoscopy
- Laryngoscopy

COMPLEX

- Mediastinoscopy
- Cystoscopy
- ERCP

CATEGORY 13: BREAST

Diseases/Conditions

BROAD

- Breast mass
- Nipple discharge
- Fibroadenoma
- Fibrocystic disease
- Intraductal papilloma
- Gynecomastia
- Invasive ductal carcinoma
- Ductal carcinoma in situ
- Invasive lobular carcinoma
- Lobular carcinoma in situ
- Fat necrosis
- Mastitis and abscess
- Galactocoele
- Mondor disease
- Inflammatory breast cancer
- Paget's disease of the nipple
- Cystosarcoma phyllodes
- Breast cancer during pregnancy and lactation
- Occult breast cancer with axillary metastasis
- Male breast cancer
- Atypical ductal hyperplasia
- Hereditary breast cancer
- Radial scar

Operations/Procedures

ESSENTIAL – COMMON

- Aspiration of breast cyst
- Duct excision
- Breast biopsy with or without needle localization
- Lumpectomy
- Simple mastectomy
- Axillary dissection
- Sentinel lymph node biopsy
- Modified radical mastectomy

ESSENTIAL – UNCOMMON

- Radical mastectomy

COMPLEX

- Stereotactic breast biopsy

CATEGORY 14: ENDOCRINE

Diseases/Conditions

BROAD

- Thyroid nodule(s)
- Papillary carcinoma
- Follicular carcinoma
- Primary hyperparathyroidism
- Hypothyroidism (postoperative)
- Hypercalcemia
- Hypocalcemia
- Addisonian crisis
- Hyperthyroidism

FOCUSED

- Thyroiditis
- Medullary carcinoma
- Hurthle cell tumors
- Anaplastic carcinoma
- Secondary hyperparathyroidism
- Tertiary hyperparathyroidism
- Recurrent or persistent hyperparathyroidism
- Parathyroid carcinoma
- Multiple endocrine neoplasia type I
- Multiple endocrine neoplasia type IIA
- Multiple endocrine neoplasia type IIB
- Incidental adrenal mass
- Pheochromocytoma
- Primary hyperaldosteronism
- Cushing's syndrome
- Cushing's disease
- Adrenocortical carcinoma

Operations/Procedures

ESSENTIAL – COMMON

- Partial or total thyroidectomy
- Parathyroidectomy

COMPLEX

- Open adrenalectomy
- Laparoscopic adrenalectomy

CATEGORY 15: SKIN AND SOFT TISSUE

Diseases/Conditions

BROAD

- Pilonidal cyst and sinus
- Nevi
- Melanoma
- Squamous cell carcinoma
- Basal cell carcinoma
- Evaluation of soft tissue masses
- Epidermal cyst
- Apocrine tumor
- Eccrine tumor
- Sebaceous tumor
- Merkel cell tumor
- Dermatofibrosarcoma
- Hidradenitis
- Cellulitis
- Necrotizing fasciitis
- Paronychia
- Felon
- Wound infection

FOCUSED

- Decubitus ulcer
- Extremity soft tissue sarcomas
- Retroperitoneal soft tissue sarcomas
- Lymphedema and lymphangitis

Operations/Procedures

ESSENTIAL – COMMON

- Excisional and incisional biopsy of skin/soft tissue lesions
- Incision, drainage, debridement for soft tissue infections
- Pilonidal cystectomy

ESSENTIAL – UNCOMMON

- Wide local excision melanoma
- Sentinel lymph node biopsy for melanoma

COMPLEX

- Iliioinguinal - femoral lymphadenectomy
- Major resection for soft tissue sarcoma

CATEGORY 16: SURGICAL CRITICAL CARE

Diseases/Conditions

BROAD (NOT AS BROAD AS SPECIALIST)

- Hypovolemic shock
- Septic shock
- Cardiogenic shock
- Neurogenic shock
- Respiratory failure
- Cardiac failure
- Gastrointestinal failure
- Hepatic failure
- Renal failure
- Coagulopathy
- Neurologic dysfunction
- Endocrine dysfunction
- Derangements of electrolytes and acid-base
- Anaphylaxis
- Pneumonia - hospital acquired

Operations/Procedures

ESSENTIAL – COMMON

- Arterial line placement
- Central venous line placement
- Pulmonary artery catheter placement
- Endotracheal intubation
- Real-time ultrasound technique for vascular localization
- Administration of oxygen and administrative devices
- Airway management
- Thoracentesis
- Paracentesis
- Nasogastric tube placement
- Urinary catheterization
- Patient controlled analgesia and epidural analgesia
- Measurement of compartment pressures (abdomen, extremity)

COMPLEX

- Cardiac pacing (external and transvenous)
- Defibrillation and cardioversion

CATEGORY 17: TRAUMA

Diseases/Conditions

BROAD

- Injuries of the spleen
- Injuries of the liver
- Injuries of the small intestine
- Injuries of the colon and rectum
- Blunt trauma
- Penetrating trauma
- Vascular injuries of the neck
- Injuries of the trachea and larynx
- Injuries of the pharynx and cervical esophagus
- Nerve injuries of the neck
- Rib fractures
- Sternal fractures
- Flail chest
- Pneumothorax
- Hemothorax
- Pulmonary contusion
- Pulmonary laceration
- Myocardial contusion
- Cardiac tamponade
- Esophageal injury
- Injuries of the diaphragm
- Injuries of the stomach
- Injuries of the duodenum
- Injuries of the pancreas
- Retroperitoneal hematoma
- Pelvic fractures
- Injuries of the kidney
- Injuries of the bladder
- Injuries of the ureter
- Vascular injuries of the thorax
- Vascular injuries of the abdomen
- Vascular injuries of the extremities
- Pediatric trauma
- Geriatric trauma
- Trauma in pregnancy

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CATEGORY 17: TRAUMA

FOCUSED

- Closed head injury
- Penetrating head injury
- Tracheobronchial injuries
- Aortic Injuries
- Urethral injuries
- Spine fracture
- Pelvic fracture
- Extremity fractures
- Dislocations
- Sprains and strains
- Mangle and traumatic amputation
- Snake bites
- Spider bites
- Bee and wasp stings
- Scorpion bites
- Animal and human bites
- Hypothermia
- Frostbite
- Flame burns
- Scald burns
- Electrical burns
- Chemical burns
- Smoke inhalation injury
- Carbon monoxide poisoning

Operations/Procedures

ESSENTIAL — UNCOMMON

- Management of esophageal trauma
- Management of gastric trauma
- Management of duodenal trauma
- Management of small bowel trauma
- Management of colon trauma
- Neck exploration for trauma
- Open exploratory thoracotomy
- Open exploratory laparotomy
- Laparoscopic exploratory laparotomy
- Splenectomy/splenorrhaphy

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CATEGORY 17: TRAUMA

ESSENTIAL — UNCOMMON (CONT.)

- Repair hepatic lacerations
- Drainage pancreatic injury
- Debride/suture major wounds
- Repair/resection for kidney trauma
- Repair ureteral injury
- Repair bladder injury
- Repair of carotid artery injury
- Repair of abdominal aorta or vena cava injury
- Repair peripheral vessels
- Fasciotomy for injury
- Repair cardiac injury
- Focused assessment with sonography (FAST scan)

COMPLEX

- Burn debridement or grafting
- Placement of intracranial pressure monitor
- Reduction and stabilization of maxillofacial fracture
- Repair of tendon or nerve
- Hepatic resection for injury
- Resection for pancreatic injury
- Closed reduction of fracture
- Open reduction of open/closed fracture
- Debridement and reduction of open fracture
- Repair of thoracic aorta, innominate, subclavian injury

CATEGORY 18: VASCULAR – ARTERIAL DISEASE

Diseases/Conditions

BROAD

- Acute limb ischemia
- Peripheral arterial emboli
- Acute arterial thrombosis
- Compartment syndromes
- Diabetic foot infections

FOCUSED

- Cerebrovascular occlusive disease
- Aortoiliac occlusive disease
- Chronic visceral occlusive disease
- Renal artery occlusive disease
- Femoropopliteal occlusive disease
- Infrapopliteal occlusive disease
- Upper extremity occlusive disease
- Buerger disease
- Fibromuscular dysplasia
- Cystic medial necrosis
- Behcet disease
- Aortic aneurysms
- Visceral arterial aneurysms
- Peripheral arterial aneurysms
- Aortic dissection
- Claudication
- Hypercoagulable syndromes
- Carotid body tumors
- Vascular graft infections
- Aortic thrombosis
- Thoracic outlet syndrome

Operations/Procedures

ESSENTIAL – UNCOMMON

- Embolectomy/thrombectomy artery
- Above knee amputation
- Below knee amputation
- Toe amputation

(continued next page)

CATEGORY 18: VASCULAR – ARTERIAL DISEASE

COMPLEX

- Aorto-iliac/femoral bypass
- Ilio-iliac/femoral bypass
- Femoral-popliteal bypass
- Profunda endarterectomy
- Infrapopliteal bypass
- Other endarterectomy
- Composite leg bypass graft
- Revise/re-do lower extremity bypass
- Arm bypass, endarterectomy, repair
- Celiac/SMA endarterectomy/bypass
- Renal endarterectomy/bypass
- Femoral-femoral bypass
- Axillo-femoral bypass
- Axillo-popliteal-tibial bypass
- Transmetatarsal amputation
- Upper extremity amputation
- Disarticulation
- Elective repair infrarenal aortoiliac aneurysm
- Repair femoral aneurysm
- Repair popliteal aneurysm
- Repair suprarenal abdominal aortic aneurysm
- Repair thoracoabdominal aortic aneurysm
- Repair thoracic aortic aneurysm
- Carotid endarterectomy
- Reoperative carotid surgery
- Excise carotid body tumor
- Direct repair aortic arch branches for CNS symptoms
- Vertebral artery operation
- Vascular ultrasound
- Angioscopy
- Balloon angioplasty
- Transcatheter stent
- Other endovascular graft
- Endovascular repair aortic aneurysm

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CATEGORY 18: VASCULAR – ARTERIAL DISEASE

COMPLEX (CONT.)

- Endovascular repair other aneurysm
- Endovascular thrombolysis
- Pseudoaneurysm repair/injection
- Explore post-op bleed, thrombosis, infection
- Graft thrombectomy/revision
- Excise infected vascular graft
- Repair graft-enteric fistula
- Sympathectomy
- Harvest arm vein
- Thoracic outlet decompression
- Repair ruptured aortic aneurysm

CATEGORY 19: VASCULAR – VENOUS

Diseases/Conditions

BROAD

- Venous thrombosis/embolism
- Thrombophlebitis, including suppurative
- Venous stasis and chronic venous insufficiency
- Varicose veins

Operations/Procedures

ESSENTIAL – COMMON

- Venous insufficiency and operation for varicose veins
- Sclerotherapy, peripheral vein
- Insertion vena caval filter

COMPLEX

- Venous embolectomy/thrombectomy
- Venous reconstruction
- Non-reconstructive venous ulcer operation
- Repair arteriovenous malformation

CATEGORY 20: VASCULAR – ACCESS

Diseases/Conditions

BROAD

- Percutaneous vascular access for dialysis

Operations/Procedures

ESSENTIAL – COMMON

- Percutaneous vascular access
- Arteriovenous graft/fistula
- Revision arteriovenous access

CATEGORY 21: TRANSPLANTATION

Diseases/Conditions

BROAD

- Brain death

FOCUSED

- Immunosuppression
- Organ preservation

Operations/Procedures

COMPLEX

- Donor nephrectomy
- Donor hepatectomy
- Kidney transplant
- Kidney-pancreas transplant
- En bloc abdominal organ retrieval
- Liver transplant
- Pancreas transplant

CATEGORY 22: THORACIC SURGERY

Diseases/Conditions

BROAD

- Pneumothorax
- Hemothorax
- Pleural effusion/empyema

FOCUSED

- Mediastinitis
- Chylothorax
- Adenocarcinoma of the lung
- Undifferentiated lung carcinoma
- Small-cell carcinoma of the lung
- Large-cell carcinoma of the lung
- Soft tissue sarcomas of chest wall
- Thymoma
- Teratoma of the mediastinum
- Neurogenic tumor of the mediastinum
- Enteric cyst of the mediastinum
- Pericardial cyst
- Bronchogenic cyst
- Superior vena cava syndrome
- Tracheoinnominate fistula
- Tracheoesophageal fistula
- Valvular heart disease
- Congestive heart failure
- Endocarditis
- Coronary artery disease
- Ventricular aneurysms
- Cardiomyopathy
- Pericarditis

Operations/Procedures

ESSENTIAL – COMMON

- Chest tube placement

ESSENTIAL – UNCOMMON

- Exploratory thoracotomy
- Pericardial window for drainage

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CATEGORY 22: THORACIC SURGERY

COMPLEX

- Thoracoscopy with or without biopsy
- Thoracoscopic pleurodesis
- Thoracoscopic Heller myotomy
- Excision mediastinal tumor
- Transthoracic repair diaphragmatic hernia
- Open drainage of empyema
- Pneumonectomy
- Cardiac procedures
- Pericardiectomy
- Pacemaker insertion

CATEGORY 23: PEDIATRIC SURGERY

Diseases/Conditions

BROAD

- Hypertrophic pyloric stenosis
- Umbilical hernia
- Inguinal hernia
- Malrotation
- Intussusception
- Meckel's diverticulum

FOCUSED

- Gastroschisis
- Omphalocele
- Esophageal atresia
- Tracheoesophageal fistula
- Foreign bodies of the trachea/esophagus
- Congenital diaphragmatic hernia
- Duodenal atresia/stenosis
- Pancreas divisum
- Intestinal atresia and meconium ileus
- Imperforate anus
- Necrotizing enterocolitis
- Hirschsprung's disease
- Biliary atresia
- Choledochal cysts
- Cryptorchidism
- Wilms tumor
- Neuroblastoma

Operations/Procedures

ESSENTIAL – COMMON

- Inguinal herniorrhaphy in children
- Umbilical hernia repair in children

ESSENTIAL – UNCOMMON

- Pyloromyotomy
- Emergency operation for malrotation
- Emergency operation for intussusception

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CATEGORY 23: PEDIATRIC SURGERY

COMPLEX

- Excise branchial cleft anomaly
- Excise thyroglossal duct cyst
- Orchiopexy
- Open antireflux procedure
- Laparoscopic antireflux procedure
- Repair intestinal atresia/stenosis
- Repair diaphragmatic hernia
- Repair omphalocele/gastroschisis
- Procedure for meconium ileus/necrotizing enterocolitis
- Excision Wilms tumor/neuroblastoma
- Operation for Hirschsprung's/imperforate anus
- Repair esophageal atresia/tracheoesophageal fistula
- Repair deformity chest wall

CATEGORY 24: PLASTIC SURGERY

Diseases/Conditions

FOCUSED

- Abdominoplasty
- Breast reduction and enlargement
- Postmastectomy reconstruction
- Abdominal wall reconstruction

Operations/Procedures

ESSENTIAL – COMMON

- Skin grafting

COMPLEX

- Revision of scars and resultant deformities
- Composite tissue transfer
- Major reconstructive procedures

CATEGORY 25: GENITOURINARY

Diseases/Conditions

FOCUSED

- Iatrogenic ureteral injury
- Neurogenic bladder
- Urinary incontinence
- Obstructive uropathy
- Impotence
- Neoplasms of the bladder
- Neoplasms of the ureter
- Neoplasms of the kidney
- Neoplasms of the prostate
- Neoplasms of the testicle
- Stone disease

Operations/Procedures

ESSENTIAL – UNCOMMON

- Hydrocelectomy
- Nephrectomy
- Orchiectomy
- Cystostomy
- Repair iatrogenic ureteral injury

COMPLEX

- Prostatectomy
- Ileal urinary conduit
- Cystectomy

CATEGORY 26: GYNECOLOGY

Diseases/Conditions

BROAD

- Ectopic pregnancy
- Pelvic inflammatory disease
- Incidental ovarian mass/cyst

FOCUSED

- Endometriosis
- Benign ovarian neoplasms
- Malignant ovarian neoplasms
- Benign uterine neoplasms
- Malignant uterine neoplasms
- Cystocele
- Rectocele

Operations/Procedures

ESSENTIAL – UNCOMMON

- Hysterectomy
- Salpingo-oophorectomy

COMPLEX

- Caesarian section
- Repair cystocele
- Repair rectocele

CATEGORY 27: HEAD AND NECK

Diseases/Conditions

BROAD

- Adenopathy
- Upper airway obstruction

FOCUSED

- Epistaxis
- Mucosal cancers of the oral cavity
- Mucosal cancers of the pharynx
- Mucosal cancers of the larynx
- Parotid gland tumors
- Submandibular gland tumors

Operations/Procedures

ESSENTIAL – COMMON

- Tracheostomy

ESSENTIAL – UNCOMMON

- Cricothyroidotomy

COMPLEX

- Resection of lip/tongue lesions
- Parotidectomy
- Modified radical neck dissection

CATEGORY 28: NERVOUS SYSTEM

Diseases/Conditions

BROAD

- Management of acute pain

FOCUSED

- Management of chronic pain

Operations/Procedures

ESSENTIAL – UNCOMMON

- Digital nerve block

COMPLEX

- Placement of indwelling epidural catheter
- Placement of nerve stimulator for chronic pain
- Celiac plexus blockade – percutaneous or endoscopic
- Thoracic splanchnicectomy
- Peripheral nerve block(s) other than digital

DISEASES/CONDITIONS BY LEVEL

BROAD

Abdomen - General

Acute abdominal pain
Intra-abdominal abscess
Rectus sheath hematoma
Mesenteric cyst

Abdomen - Hernia

Inguinal hernia
Femoral hernia
Ventral hernia
Miscellaneous hernias

Abdomen - Biliary

Jaundice
Acute cholecystitis
Chronic cholecystitis
Cholelithiasis
Biliary pancreatitis
Acalculous cholecystitis and biliary dyskinesia
Iatrogenic bile duct injury
Gallstone ileus
Gallbladder polyps
Gallbladder cancer (incidental)

Abdomen - Liver

Liver mass - evaluation
Hepatic abscess

Abdomen - Pancreas

Pancreatic abscess and infected necrosis
Pancreatic pseudocyst

Abdomen - Spleen

Postsplenectomy sepsis
Splenic abscess

Alimentary Tract - Esophagus

Gastroesophageal reflux and Barrett's esophagus
Hiatal hernia
Dysphagia
Spontaneous esophageal perforation
Iatrogenic esophageal perforation
Mallory-Weiss syndrome
Stricture

Alimentary Tract - Stomach

Upper gastrointestinal bleeding
Gastric carcinoma
Duodenal ulcer
Gastric ulcer
Peptic ulcer disease with bleeding
Peptic ulcer disease with perforation
Peptic ulcer disease with obstruction
Gastric polyps
Gastric lymphoma
Gastric carcinoid tumor
Stress gastritis

Alimentary Tract - Small Intestine

Small bowel obstruction and ileus
Emergent management of Crohn disease of small intestine
Acute mesenteric ischemia: arterial, venous, and nonocclusive
Meckel's diverticulum
Radiation enteritis
Small intestinal polyps
Small intestinal adenocarcinoma
Small intestinal lymphoma
Small intestinal carcinoid tumor
Small intestinal GISTs
Intussusception
Pneumatosis cystoides intestinalis
Enterocutaneous fistula

BROAD

Alimentary Tract - Large Intestine

Lower gastrointestinal bleeding
Large bowel obstruction
Acute appendicitis
Diverticulitis
Diverticular bleeding
Diverticular fistulae
Colonic polyps
Colonic cancer
Emergent management of ulcerative colitis
Emergent management of Crohn's disease of colon
Volvulus
Miscellaneous colonic neoplasms
Appendiceal neoplasms
Emergent management of indeterminate colitis
Ischemic colitis
Antibiotic-induced colitis

Alimentary Tract - Anorectal

Hemorrhoids
Anal fissure
Anorectal abscess and fistulae
Rectal cancer
Anal cancer

Breast

Breast mass
Nipple discharge
Fibroadenoma
Fibrocystic disease
Intraductal papilloma
Gynecomastia
Invasive ductal carcinoma
Ductal carcinoma in situ
Invasive lobular carcinoma
Lobular carcinoma in situ
Fat necrosis
Mastitis and abscess
Galactocele
Mondor disease
Inflammatory breast cancer
Paget's disease of the nipple
Cystosarcoma phylloides
Breast cancer during pregnancy and lactation
Occult breast cancer with axillary metastasis
Male breast cancer
Atypical ductal hyperplasia
Hereditary breast cancer
Radial scar

Endocrine

Thyroid nodule(s)
Papillary carcinoma
Follicular carcinoma
Primary hyperparathyroidism
Hypothyroidism (postoperative)
Hypercalcemia
Hypocalcemia
Addisonian crisis
Hyperthyroidism

Skin and Soft Tissue

Pilonidal cyst and sinus
Nevi
Melanoma
Squamous cell carcinoma
Basal cell carcinoma
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BROAD

Skin and Soft Tissue (cont.)

Evaluation of soft tissue masses

Epidermal cyst

Apocrine tumor

Eccrine tumor

Sebaceous tumor

Merkel cell tumor

Dermatofibrosarcoma

Hidradenitis

Cellulitis

Necrotizing fasciitis

Paronychia

Felon

Wound infection

Surgical Critical Care

Hypovolemic shock

Septic shock

Cardiogenic shock

Neurogenic shock

Respiratory failure

Cardiac failure

Gastrointestinal failure

Hepatic failure

Renal failure

Coagulopathy

Neurologic dysfunction

Endocrine dysfunction

Derangements of electrolytes and acid-base

Anaphylaxis

Pneumonia - hospital acquired

Trauma

Injuries of the spleen

Injuries of the liver

Injuries of the small intestine

Injuries of the colon and rectum

Blunt trauma

Penetrating trauma

Vascular injuries of the neck

Injuries of the trachea and larynx

Injuries of the pharynx and cervical esophagus

Nerve injuries of the neck

Rib fractures

Sternal fractures

Flail chest

Pneumothorax

Hemothorax

Pulmonary contusion

Pulmonary laceration

Myocardial contusion

Cardiac tamponade

Esophageal Injury

Injuries of the diaphragm

Injuries of the stomach

Injuries of the duodenum

Injuries of the pancreas

Retroperitoneal hematoma

Pelvic fractures

Injuries of the kidney

Injuries of the bladder

Injuries of the ureter

Vascular injuries of the thorax

Vascular injuries of the abdomen

Vascular injuries of the extremities

Pediatric trauma

Geriatric trauma

Trauma in pregnancy

BROAD

Vascular - Arterial Disease

Acute limb ischemia
Peripheral arterial emboli
Acute arterial thrombosis
Compartment syndromes
Diabetic foot infections

Vascular - Venous

Venous thrombosis/embolism
Thrombophlebitis, including suppurative
Venous stasis and chronic venous insufficiency
Varicose veins

Vascular - Access

Percutaneous vascular access for dialysis

Transplantation

Brain death

Thoracic Surgery

Pneumothorax
Hemothorax
Pleural effusion/empyema

Pediatric Surgery

Hypertrophic pyloric stenosis
Inguinal hernia
Umbilical hernia
Malrotation
Intussusception
Meckel's diverticulum

Gynecology

Ectopic pregnancy
Pelvic inflammatory disease
Incidental ovarian mass/cyst

Head and Neck

Adenopathy
Upper airway obstruction

Nervous System

Management of acute pain

FOCUSED

Abdomen - General

Chronic abdominal pain
Carcinomatosis
Pseudomyxoma peritonei
Spontaneous bacterial peritonitis
Desmoid tumors
Chylous ascites
Retroperitoneal fibrosis

Abdomen - Biliary

Gallbladder cancer
Cancer of the bile ducts
Choledochal cyst
Sclerosing cholangitis
Ampullary stenosis/sphincter of Oddi dysfunction

Abdomen - Liver

Hepatic adenoma
Focal nodular hyperplasia
Hemangioma
Hepatocellular carcinoma
Cholangiocarcinoma
Metastatic tumors
Miscellaneous hepatic neoplasms
Ascites
Bleeding esophageal varices
Hepatic failure and encephalopathy
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Abdomen - Liver (cont.)

Hepatorenal syndrome
Viral hepatitis (occupational risk)
Budd-Chiari syndrome

Abdomen - Pancreas

Autoimmune pancreatitis
Chronic pancreatitis, including hereditary pancreatitis
Pancreatic insufficiency
Ductal adenocarcinoma
Acinar cell carcinoma
Cystic neoplasms
Intraductal papillary mucinous neoplasms
Other periampullary neoplasms
Gastrinoma and Z-E syndrome
Insulinoma
VIPoma
Glucagonoma
Somatostatinoma
Nonfunctional endocrine tumors
Lymphoma of pancreas

Abdomen - Spleen

Hemolytic anemias
Idiopathic thrombocytopenic purpura
Secondary hypersplenism and splenomegaly
Neoplasms of spleen
Splenic cysts

Alimentary Tract - Esophagus

Achalasia
Zenker's diverticulum
Epiphrenic diverticulum
Foreign bodies
Schatzki's ring
Chemical burns
Benign neoplasms
Adenocarcinoma
Squamous cell carcinoma
Diffuse esophageal spasm
Nutcracker esophagus
Presbyesophagus
Scleroderma connective tissue disorders

Alimentary Tract - Stomach

Morbid obesity
Bezoars and foreign bodies
Gastroparesis
Postgastrectomy syndromes

Alimentary Tract - Small Intestine

Short bowel syndrome
Enteric infections and blind loop syndrome

Alimentary Tract - Large Intestine

Endometriosis
Irritable bowel syndrome
Functional constipation
Infectious colitis

Alimentary Tract - Anorectal

Pelvic floor dysfunction
Incontinence
Anal dysplasia/sexually-transmitted disease
Rectal prolapse

Endocrine

Thyroiditis
Medullary carcinoma
Hurthle cell tumors
Anaplastic carcinoma

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FOCUSED

Endocrine (cont.)

Secondary hyperparathyroidism
Tertiary hyperparathyroidism
Recurrent or persistent hyperparathyroidism
Parathyroid carcinoma
Multiple endocrine neoplasia type I
Multiple endocrine neoplasia type IIA
Multiple endocrine neoplasia type IIB
Incidental adrenal mass
Pheochromocytoma
Primary hyperaldosteronism
Cushing's syndrome
Cushing's disease
Adrenocortical carcinoma

Skin and Soft Tissue

Decubitus ulcer
Extremity soft tissue sarcomas
Retroperitoneal soft tissue sarcomas
Lymphedema and lymphangitis

Trauma

Closed head injury
Penetrating head injury
Tracheobronchial injuries
Aortic injuries
Urethral injuries
Spine fracture
Pelvic fracture
Extremity fractures
Dislocations
Sprains and strains
Mangle and traumatic amputation
Snake bites
Spider bites
Bee and wasp stings
Scorpion bites
Animal and human bites
Hypothermia
Frostbite
Flame burns
Scald burns
Electrical burns
Chemical burns
Smoke inhalation injury
Carbon monoxide poisoning

Vascular - Arterial Disease

Cerebrovascular occlusive disease
Aortoiliac occlusive disease
Chronic visceral occlusive disease
Renal artery occlusive disease
Femoropopliteal occlusive disease
Infrapopliteal occlusive disease
Upper extremity occlusive disease
Buerger disease
Fibromuscular dysplasia
Cystic medial necrosis
Behcet disease
Aortic aneurysms
Visceral arterial aneurysms
Peripheral arterial
Aortic dissection
Claudication
Hypercoagulable syndromes
Carotid body tumors
Vascular graft infections
Aortic thrombosis
Thoracic outlet syndrome

Transplantation

Immunosuppression

Organ preservation

Thoracic Surgery

Mediastinitis

Chylothorax

Adenocarcinoma of the lung

Undifferentiated lung carcinoma

Small-cell carcinoma of the lung

Large-cell carcinoma of the lung

Soft tissue sarcomas of chest wall

Thymoma

Teratoma of the mediastinum

Neurogenic tumor of the mediastinum

Enteric cyst of the mediastinum

Pericardial cyst

Bronchogenic cyst

Superior vena cava syndrome

Tracheoinnominate fistula

Tracheoesophageal fistula

Valvular heart disease

Congestive heart failure

Endocarditis

Coronary artery disease

Ventricular aneurysms

Cardiomyopathy

Pericarditis

Pediatric Surgery

Gastroschisis

Omphalocele

Esophageal atresia

Tracheoesophageal fistula

Foreign bodies of the trachea/esophagus

Congenital diaphragmatic hernia

Duodenal atresia/stenosis

Pancreas divisum

Intestinal atresia and meconium ileus

Imperforate anus

Necrotizing enterocolitis

Hirschsprung's disease

Biliary atresia

Choledochal cysts

Cryptorchidism

Wilms tumor

Neuroblastoma

Plastic Surgery

Abdominoplasty

Breast reduction and enlargement

Postmastectomy reconstruction

Abdominal wall reconstruction

Genitourinary

Iatrogenic ureteral injury

Neurogenic bladder

Urinary incontinence

Obstructive uropathy

Impotence

Neoplasms of the bladder

Neoplasms of the ureter

Neoplasms of the kidney

Neoplasms of the prostate

Neoplasms of the testicle

Stone disease

FOCUSED

Gynecology

Endometriosis

Benign ovarian neoplasms

Malignant ovarian neoplasms

Benign uterine neoplasms

Malignant uterine neoplasms

Cystocele

Rectocele

Head and Neck

Epistaxis

Mucosal cancers of the oral cavity

Mucosal cancers of the pharynx

Mucosal cancers of the larynx

Parotid gland tumors

Submandibular gland tumors

Nervous System

Management of chronic pain

OPERATIONS/PROCEDURES BY LEVEL

ESSENTIAL — COMMON

Abdomen - General

Insertion peritoneal dialysis catheter
Diagnostic laparoscopy
Open exploratory laparotomy

Abdomen - Hernia

Open repair of inguinal and femoral hernia
Laparoscopic repair of inguinal and femoral hernia
Open repair of ventral hernia
Laparoscopic repair of ventral hernia

Abdomen - Biliary

Open cholecystectomy with or without cholangiography
Laparoscopic cholecystectomy with or without cholangiography

Abdomen - Liver

Open liver biopsy
Laparoscopic liver biopsy

Abdomen - Spleen

Open splenectomy
Laparoscopic splenectomy

Alimentary Tract - Esophagus

Laparoscopic antireflux procedure

Alimentary Tract - Stomach

Percutaneous endoscopic gastrostomy
Open gastrostomy

Alimentary Tract - Small Intestine

Open small bowel resection
Open adhesiolysis
Laparoscopic adhesiolysis
Ileostomy
Ileostomy closure
Open feeding jejunostomy
Laparoscopic feeding jejunostomy

Alimentary Tract - Large Intestine

Open appendectomy
Laparoscopic appendectomy
Open partial colectomy
Laparoscopic partial colectomy
Colostomy
Colostomy closure

Alimentary Tract - Anorectal

Banding for internal hemorrhoids
Hemorrhoidectomy
Subcutaneous lateral internal sphincterotomy
Drainage anorectal abscess
Anal fistulotomy/seton placement

Endoscopy

Esophagogastroduodenoscopy
Proctoscopy
Colonoscopy with or without biopsy/polypectomy
Bronchoscopy
Laryngoscopy

Breast

Aspiration of breast cyst
Duct excision
Breast biopsy with or without needle localization
Lumpectomy
Simple mastectomy
Axillary dissection
Sentinel lymph node biopsy
Modified radical mastectomy

ESSENTIAL — COMMON

Endocrine

Partial or total thyroidectomy

Parathyroidectomy

Skin and Soft Tissue

Excisional and incisional biopsy of skin/soft tissue lesions

Incision, drainage, debridement for soft tissue infections

Pilonidal cystectomy

Surgical Critical Care

Arterial line placement

Central venous line placement

Pulmonary artery catheter placement

Endotracheal intubation

Real-time ultrasound technique for vascular localization

Administration of oxygen and administrative devices

Airway management

Thoracentesis

Paracentesis

Nasogastric tube placement

Urinary catheterization

Patient controlled analgesia and epidural analgesia

Measurement of compartment pressures (abdomen, extremity)

Vascular - Venous

Venous insufficiency and operation for varicose veins

Sclerotherapy, peripheral vein

Insertion of vena caval filter

Vascular - Access

Percutaneous vascular access

Arteriovenous graft/fistula

Revision arteriovenous access

Thoracic Surgery

Chest tube placement

Pediatric Surgery

Inguinal herniorrhaphy in children

Umbilical hernia repair in children

Plastic Surgery

Skin grafting

Head and Neck

Tracheostomy

ESSENTIAL — UNCOMMON

Abdomen - General

Open drainage abdominal abscess

Abdomen - Hernia

Repair miscellaneous hernias

Abdomen - Biliary

Cholecystostomy

Open common bile duct exploration

Choledochoscopy

Choledochoenteric anastomosis

Operation for gallbladder cancer (when found incidentally)

Repair acute common bile duct injury

Abdomen - Liver

Drainage liver abscess

Abdomen - Spleen

Partial splenectomy/splenorrhaphy

Alimentary Tract - Esophagus

Open antireflux procedure

Open repair of paraesophageal hernia

Laparoscopic repair of paraesophageal hernia

Repair/resection of perforated esophagus

Alimentary Tract - Stomach

Partial/total gastrectomy
Repair duodenal perforation
Truncal vagotomy and drainage

Alimentary Tract - Small Intestine

Superior mesenteric artery embolectomy/thrombectomy

Alimentary Tract - Large Intestine

Subtotal colectomy with ileorectal anastomosis/ileostomy

Alimentary Tract - Anorectal

Excision of anal cancer

Breast

Radical mastectomy

Skin and Soft Tissue

Wide local excision melanoma
Sentinel lymph node biopsy for melanoma

Trauma

Management of esophageal trauma
Management of gastric trauma
Management of duodenal trauma
Management of small bowel trauma
Management of colon trauma
Neck exploration for trauma
Open exploratory thoracotomy
Open exploratory laparotomy
Laparoscopic exploratory laparotomy
Splenectomy/splenorrhaphy
Repair hepatic lacerations
Drainage pancreatic injury
Debride/suture major wounds
Repair/resection for kidney trauma
Repair ureteral injury
Repair bladder injury
Repair of carotid artery injury
Repair of abdominal aorta or vena cava injury
Repair peripheral vessels
Fasciotomy for injury
Repair cardiac injury
Focused assessment with sonography (FAST scan)

Vascular - Arterial Disease

Embolectomy/thrombectomy artery
Above knee amputations
Below knee amputations
Toe amputations

Thoracic Surgery

Exploratory thoracotomy
Pericardial window for drainage

Pediatric Surgery

Pyloromyotomy
Emergency operation for malrotation
Emergency operation for intussusception

Genitourinary

Hydrocelectomy
Nephrectomy
Orchiectomy
Cystostomy
Repair iatrogenic ureteral injury

Gynecology

Hysterectomy
Salpingo-oophorectomy

Head and Neck

Cricothyroidotomy

Nervous System

Digital nerve block

COMPLEX

Abdomen - General

Open retroperitoneal lymph node dissection
Laparoscopic retroperitoneal lymph node dissection
Operation for pseudomyxoma

Abdomen - Hernia

Component separation abdominal wall reconstruction

Abdomen - Biliary

Laparoscopic common bile duct exploration
Operation for gallbladder cancer (planned)
Operation for bile duct cancer
Excision choledochal cyst
Transduodenal sphincteroplasty

Abdomen - Liver

Open segmentectomy/lobectomy
Laparoscopic segmentectomy/lobectomy
Intraoperative ultrasound of liver
Portal-systemic shunt

Abdomen - Pancreas

Laparoscopic/endoscopic pancreatic debridement for necrosis
Pancreaticoduodenectomy
Total pancreatectomy
Ampullary resection for tumor
Distal pancreatectomy
Longitudinal pancreaticojejunostomy
Frey procedure
Beger procedure
Intraoperative pancreatic ultrasound
Open pancreatic debridement for necrosis
Drainage pancreatic pseudocyst

Alimentary Tract - Esophagus

Total esophagectomy
Esophagogastrectomy
Cricopharyngeal myotomy with excision Zenker's diverticulum
Open Heller myotomy
Laparoscopic Heller myotomy
Collis gastroplasty

Alimentary Tract - Stomach

Open operation for morbid obesity
Laparoscopic operation for morbid obesity
Laparoscopic gastric resection
Proximal gastric vagotomy
Revisional procedures for postgastrectomy syndromes

Alimentary Tract - Small Intestine

Strictureplasty for Crohn's disease

Alimentary Tract - Large Intestine

Total proctocolectomy and ileoanal pull-through

Alimentary Tract - Anorectal

Stapled hemorrhoidectomy
Repair complex anorectal fistulae
Operation for incontinence/constipation
Open transabdominal operation for rectal prolapse
Laparoscopic transabdominal operation for rectal prolapse
Perineal operation for rectal prolapse
Transanal resection for tumor
Abdominoperineal resection
Pelvic exenteration for rectal cancer
Operation for anal cancer

Endoscopy

Mediastinoscopy
Cystoscopy
ERCP

Breast

Stereotactic breast biopsy

COMPLEX

Endocrine

Open adrenalectomy
Laparoscopic adrenalectomy

Skin and Soft Tissue

Ilioinguinal - femoral lymphadenectomy
Major resection for soft tissue sarcoma

Surgical Critical Care

Cardiac pacing (external and transvenous)
Defibrillation and cardioversion

Trauma

Burn debridement or grafting
Placement of intracranial pressure monitor
Reduction and stabilization of maxillofacial fracture
Repair of tendon or nerve
Hepatic resection for injury
Resection for pancreatic injury
Closed reduction of fracture
Open reduction of open/closed fracture
Debridement and reduction of open fracture
Repair of thoracic aorta, innominate, subclavian injury

Vascular - Arterial Disease

Aorto-iliac/femoral bypass
Ilio-iliac/femoral bypass
Femoral-popliteal bypass
Profunda endarterectomy
Infrapopliteal bypass
Other endarterectomy
Composite leg bypass graft
Revise/re-do lower extremity bypass
Arm bypass, endarterectomy, repair
Celiac/SMA endarterectomy/bypass
Renal endarterectomy/bypass
Femoral-femoral bypass
Axillo-femoral bypass
Axillo-popliteal-tibial bypass
Transmetatarsal amputation
Upper extremity amputation
Disarticulation
Elective repair infrarenal aortoiliac aneurysm
Repair femoral aneurysm
Repair popliteal aneurysm
Repair suprarenal abdominal aortic aneurysm
Repair thoracoabdominal aortic aneurysm
Repair thoracic aortic aneurysm
Carotid endarterectomy
Reoperative carotid surgery
Excise carotid body tumor
Direct repair aortic arch branches for CNS symptoms
Vertebral artery operation
Vascular ultrasound
Angioscopy
Balloon angioplasty
Transcatheter stent
Other endovascular graft
Endovascular repair aortic aneurysm
Endovascular repair other aneurysm
Endovascular thrombolysis
Pseudoaneurysm repair/injection
Explore post-op bleed, thrombosis, infection
Graft thrombectomy/revision
Excise infected vascular graft
Repair graft-enteric fistula
Sympathectomy
Harvest arm vein
Thoracic outlet decompression
Repair ruptured aortic aneurysm

COMPLEX

Vascular - Venous

Venous embolectomy/thrombectomy
Venous reconstruction
Non-reconstructive venous ulcer operation
Repair arteriovenous malformation

Transplantation

Donor nephrectomy
Donor hepatectomy
Kidney transplant
Kidney-pancreas transplant
En bloc abdominal organ retrieval
Liver transplant
Pancreas transplant

Thoracic Surgery

Thoracoscopy with or without biopsy
Thoracoscopic pleurodesis
Thoracoscopic Heller myotomy
Excision mediastinal tumor
Transthoracic repair diaphragmatic hernia
Open drainage of empyema
Pneumonectomy
Cardiac procedures
Pericardiectomy
Pacemaker insertion

Pediatric Surgery

Excise branchial cleft anomaly
Excise thyroglossal duct cyst
Orchiopexy
Open antireflux procedure
Laparoscopic antireflux procedure
Repair intestinal atresia/stenosis
Repair diaphragmatic hernia
Repair omphalocele/gastroschisis
Procedure for meconium ileus/necrotizing enterocolitis
Excision Wilms tumor/neuroblastoma
Operation for Hirschsprung's/imperforate anus
Repair esophageal atresia/tracheoesophageal fistula
Repair deformity chest wall

Plastic Surgery

Revision of scars and resultant deformities
Composite tissue transfer
Major reconstructive procedures

Genitourinary

Prostatectomy
Ileal urinary conduit
Cystectomy

Gynecology

Caesarian section
Repair cystocele
Repair rectocele

Head and Neck

Resection of lip/tongue lesions
Parotidectomy
Modified radical neck dissection

Nervous System

Placement of indwelling epidural catheter
Placement of nerve stimulator for chronic pain
Celiac plexus blockade – percutaneous or endoscopic
Thoracic splanchnicectomy
Peripheral nerve block(s) other than digital

CATEGORY 1: ANESTHESIA

- Choice of anesthesia
- Conscious sedation – agents and technique
- General anesthesia – agents and technique
- Regional anesthesia – agents and technique
- Intraoperative monitoring and common intraoperative problems
- Postoperative pain

CATEGORY 2: BIostatISTICS AND EVALUATION OF EVIDENCE

- Research design
- How data is expressed and summarized
- Tests of significance
- Evaluating the quality and applicability of a study
- Levels of evidence
- Surveys and qualitative research

CATEGORY 3: FLUIDS, ELECTROLYTES AND ACID-BASE BALANCE

- Normal body fluid compartments and fluid homeostasis, maintenance fluid and electrolyte therapy
- Hyponatremia and hypernatremia
- Hypokalemia and hyperkalemia
- Hypocalcemia and hypercalcemia
- Magnesium and phosphorus disorders
- Normal acid-base regulation and acid-base disorders

CATEGORY 4: GERIATRIC SURGERY AND END-OF-LIFE CARE

- Nature and clinical impact of physiologic changes associated with aging
- Preoperative evaluation of geriatric patients
- Medication and dosing issues in the elderly
- Goal setting with elderly patients and families
- Advanced directives, DNR orders and power of attorney
- Palliative and hospice care
- Postoperative delirium
- Functional decline

CATEGORY 5: IMMUNOLOGY

- Components of the immune system
- The immune response to injury and infection
- Transplant immunology
- Surgery and surgical conditions in immunocompromised hosts

CATEGORY 6: INFECTION AND ANTIMICROBIAL THERAPY

- Host defense and infection
- Diagnostic approach to infection
- Bacterial infections in surgical patients and their treatment
- Viral infections in surgical patients and their treatment
- Fungal infections in surgical patients and their treatment
- Surgical site infections and prophylaxis
- Pathophysiology of sepsis
- Infection control

CATEGORY 7: MINIMALLY INVASIVE SURGERY – PRINCIPLES

- MIS equipment and troubleshooting
- Principles and techniques of abdominal access
- Physiology of the patient with pneumoperitoneum
- Technical aspects of laparoscopic surgery
- Robotic surgery

CATEGORY 8: NUTRITION AND METABOLISM

- Normal nutritional requirements
- Effect of surgery and injury on nutritional requirements
- Nutritional assessment, indications and choice of route for nutritional support
- Technique of enteral nutrition
- Technique of parenteral nutrition
- Nutritional pharmacology and immunonutrition
- Long-term nutritional support

CATEGORY 9: ONCOLOGY AND TUMOR BIOLOGY

- Epidemiology of cancer
- Etiology of cancer
- Genetic susceptibility to cancer
- Cancer screening and biomarkers
- Molecular biology of cancer
- Cancer immunology
- Chemotherapy of cancer
- Radiation therapy for cancer
- Clinical trials in cancer

CATEGORY 10: PHARMACOLOGY

- Principles of pharmacokinetics and pharmacodynamics; serum monitoring of drug levels
- Adverse effects of drugs commonly used in surgical patients

CATEGORY 11: PREOPERATIVE EVALUATION AND PERIOPERATIVE CARE

- Systems for the evaluation of surgical risk
- Preoperative assessment and management of cardiac risk
- Preoperative assessment and management of pulmonary risk
- Preoperative assessment and management of coexisting infection
- Perioperative management of the therapeutically anticoagulated patient requiring surgery
- Perioperative prophylaxis of venous thromboembolism
- Perioperative management of the patient on steroids requiring surgery
- Common postoperative problems in general surgical patients

CATEGORY 12: TRANSFUSION AND DISORDERS OF COAGULATION

- Normal mechanisms of hemostasis and coagulation
- Inherited and acquired disorders of coagulation
- Approach to the patient with ongoing bleeding and laboratory assessment of coagulation
- Transfusion – indications, risks, type and cross-match, component therapy, ethical issues

CATEGORY 13: WOUND HEALING

- Physiology of normal wound healing
- Disturbances of wound healing and chronic wounds
- Wound closure
- Postoperative wound care
- Adjunctive wound care

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