



Curriculum Outline

for

General Surgery

2016–2017

SURGICAL COUNCIL ON
RESIDENT EDUCATION

www.surgicalcore.org



CURRICULUM
OUTLINE
FOR
GENERAL SURGERY

2016–2017

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Resident Education*

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SCORE Curriculum Outline for General Surgery

The SCORE® Curriculum Outline for General Surgery is a list of topics to be covered in a five-year general surgery residency program. The outline is updated annually to remain contemporary and reflect feedback from SCORE member organizations and specialty surgical societies.

Topics are listed for all six competencies of the Accreditation Council for Graduate Medical Education (ACGME): patient care; medical knowledge; professionalism; interpersonal and communication skills; practice-based learning and improvement; and systems-based practice. The patient care topics cover 28 organ system-based categories, with each category separated into Diseases/Conditions and Operations/Procedures. Topics within these two areas are then designated as *Core* or *Advanced*.

Changes from the previous edition are indicated in the Excel version of this outline, available at www.surgicalcore.org. Note that topics listed in this booklet may not directly match those currently on the SCORE Portal — this outline is forward-looking, reflecting the latest updates.

The Surgical Council on Resident Education (SCORE) is a nonprofit consortium formed in 2006 by the principal organizations involved in U.S. surgical education. SCORE's mission is to improve the education of general surgery residents through the development of a national curriculum for general surgery residency training. The members of SCORE are:

American Board of Surgery

American College of Surgeons

American Surgical Association

Association of Program Directors in Surgery

Association for Surgical Education

Residency Review Committee for Surgery
of the ACGME

Society of American Gastrointestinal
and Endoscopic Surgeons

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ABOUT THIS DOCUMENT

SCORE was founded in 2006 by the leading organizations involved in U.S. surgical education to answer the question, “What do we expect our residents to know and be able to do proficiently by the end of their training?” As described by the ACGME, we expect graduating residents to be competent in six areas: patient care; medical knowledge; professionalism; interpersonal and communication skills; practice-based learning; and systems-based practice. In 2004, the American Board of Surgery began to develop a patient care curriculum by listing the specific patient care competencies expected of graduating general surgery residents. This effort was expanded into this document, with significant input from the Association of Program Directors in Surgery, as well as many specialty surgical societies.

The patient care competency was chosen as the first subject for curriculum development because many felt this area was the most in need of definition and attention. The medical knowledge competency was added in 2010-2011, and in 2015-2016, two more competencies, interpersonal and communication skills and systems-based practice, were added. As of this edition, the outline now reflects all six competencies.

This outline 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. As the outline has evolved, many topics have also been consolidated to more accurately describe the required knowledge.

THE SCORE PORTAL

The *SCORE Portal* (www.surgicalcore.org) has been created to provide educational content and assessment in support of the curriculum to general surgery residency programs. Learning “modules” are available on the portal for nearly all of the topics listed in this booklet, with modules for the few remaining topics to be posted in the near future. The Excel version of this outline indicates which topics do not yet have modules on the portal.

Modules on the portal contain learning objectives, discussion questions, and a variety of resource materials, including textbook chapters, videos and radiologic images. Multiple-choice questions are also available to assess resident knowledge. The portal also offers *This Week in SCORE*[®] (TWIS), a two-year schedule of topics to assist programs in covering the portal's content. Each week a new topic is featured, along with related modules and a new 10-question quiz. To learn more about TWIS and the SCORE Portal, please visit www.surgicalcore.org.

PATIENT CARE CLASSIFICATION SYSTEM

The patient care curriculum topics are organized into 28 organ-based categories. Within each category, the topics are further separated into Diseases/Conditions and Operations/Procedures. The topics are then stratified into two levels using the same classifications:

- **CORE** – Diseases and procedures encountered in general surgery for which a graduate of training will possess significant knowledge and be able to provide comprehensive care, including procedural competency.
- **ADVANCED** – Diseases and procedures that are not consistently part of general surgery practice for which a graduate of training should have sufficient knowledge to make a diagnosis and provide initial management. In some instances, graduates will have sufficient knowledge and experience to provide comprehensive care.

1. Abdomen – General

Diseases/Conditions

CORE

- Abdominal Pain - Acute
- Abdominal Pain - Chronic
- Bacterial Peritonitis - Spontaneous
- Intra-abdominal Abscess
- Rectus Sheath Hematoma

ADVANCED

- Ascites - Chylous
- Desmoids/Fibromatoses
- Mesenteric Cyst
- Peritoneal Neoplasms - Carcinomatosis
- Peritoneal Neoplasms - Pseudomyxoma Peritonei

Operations/Procedures

CORE

- Diagnostic Laparoscopy
- Intra-abdominal Abscess - Drainage
- Peritoneal Dialysis Catheter Insertion
- Peritoneal Lesion - Biopsy

2. Abdomen – Hernia

Diseases/Conditions

CORE

- Inguinal and Femoral Hernias
- Miscellaneous Hernias
- Prosthetic Mesh Infections - Management
- Umbilical and Epigastric Hernias
- Ventral Hernia

Operations/Procedures

CORE

- Diaphragmatic Hernia - Repair
- Inguinal and Femoral Hernia - Repair
- Miscellaneous Hernias - Repair
- Ventral Hernia - Repair

ADVANCED

- Abdominal Wall Reconstruction - Components Separation

3. Abdomen – Biliary

Diseases/Conditions

CORE

- Bile Duct Injury - Iatrogenic
- Bile Duct Neoplasms
- Cholangitis
- Cholecystitis - Acalculous
- Cholecystitis - Acute and Chronic
- Choledochal Cyst
- Choledocholithiasis
- Gallbladder Cancer
- Gallbladder Polyps
- Gallstone Ileus
- Jaundice - Obstructive
- Pancreatitis - Biliary

ADVANCED

- Ampullary Stenosis/Sphincter of Oddi Dysfunction
- Primary Sclerosing Cholangitis

Operations/Procedures

CORE

- Cholecystectomy with or without Cholangiography
- Cholecystostomy
- Choledochoenteric Anastomosis
- Choledochoscopy
- Common Bile Duct Exploration - Laparoscopic
- Common Bile Duct Exploration - Open

ADVANCED

- Bile Duct Cancer - Operation
- Bile Duct Injury - Acute Repair
- Bile Duct Neoplasms - Operation
- Gallbladder Cancer - Operation
- Transduodenal Sphincteroplasty
- Ultrasound of the Biliary Tree

4. Abdomen – Liver

Diseases/Conditions

CORE

- Hepatic Abscess
- Hepatic Mass - Evaluation
- Hepatic Neoplasms - Benign
- Hepatic Neoplasms - Malignant
- Hepatic Neoplasms - Metastatic

ADVANCED

- Budd-Chiari Syndrome
- Cirrhosis/Portal Hypertension (Ascites)
- Esophageal Varices

Operations/Procedures

CORE

- Hepatic Abscess - Drainage
- Hepatic Biopsy

ADVANCED

- Hepatic Ultrasound - Intraoperative
- Segmentectomy/Lobectomy - Laparoscopic
- Segmentectomy/Lobectomy - Open

5. Abdomen – Pancreas

Diseases/Conditions

CORE

- Pancreatic Neoplasms - Cystic
- Pancreatic Neoplasms - Endocrine
- Pancreatic Neoplasms - Exocrine
- Pancreatic Pseudocyst
- Pancreatitis - Acute/Pancreatic Necrosis/Abscess

ADVANCED

- Intraductal Papillary Mucinous Neoplasms
- Pancreas Divisum
- Pancreatitis - Autoimmune
- Pancreatitis - Chronic (Including Hereditary Pancreatitis)/Pancreatic Insufficiency
- Periapillary Neoplasms - Other

Operations/Procedures

CORE

- Pancreatectomy - Distal
- Pancreatic Debridement
- Pancreatic Pseudocyst - Drainage

ADVANCED

- Ampullary Resection for Tumor
- Pancreatectomy - Frey and Beger Procedures
- Pancreatectomy - Total
- Pancreatic Ultrasound - Intraoperative
- Pancreaticoduodenectomy
- Pancreaticojejunostomy - Longitudinal

6. Abdomen – Spleen

Diseases/Conditions

CORE

- Idiopathic Thrombocytopenic Purpura
- Postsplenectomy Sepsis

ADVANCED

- Hemolytic Anemias
- Hypersplenism - Secondary and Splenomegaly
- Splenic Abscess, Cysts, and Neoplasms

Operations/Procedures

CORE

- Splenectomy
- Splenectomy/Splenorrhaphy - Partial

7. Alimentary Tract – Esophagus

Diseases/Conditions

CORE

- Achalasia
- Dysphagia
- Esophageal Neoplasms - Benign
- Esophageal Neoplasms - Malignant
- Esophageal Perforation - Iatrogenic
- Gastroesophageal Reflux/Barrett's Esophagus
- Hiatal Hernias
- Mallory-Weiss Syndrome
- Stricture

ADVANCED

- Esophageal Caustic Ingestion and Foreign Bodies
- Esophageal Diverticula
- Esophageal Motility Disorders other than Achalasia
- Esophageal Perforation - Spontaneous

Operations/Procedures

CORE

- Antireflux Procedures

ADVANCED

- Cricopharyngeal Myotomy with Zenker's Diverticulum - Excision
- Esophageal Perforation - Repair/Resection
- Esophagectomy/Esophagogastrectomy
- Esophagomyotomy (Heller)
- Paraesophageal Hernia - Laparoscopic Repair
- Paraesophageal Hernia - Open Repair

8. Alimentary Tract – Stomach

Diseases/Conditions

CORE

- Gastric Bezoars and Foreign Bodies
- Gastric Cancer
- Gastrointestinal Bleeding - Upper
- Gastrointestinal Stromal Tumors (GIST) and Miscellaneous Neoplasms
- Morbid Obesity
- Peptic Ulcer Disease with Complications
- Stress Gastritis

ADVANCED

- Gastroparesis
- Postgastrectomy Syndromes

Operations/Procedures

CORE

- Duodenal Perforation - Repair
- Gastrectomy - Partial/Total
- Gastrostomy
- Vagotomy and Drainage

ADVANCED

- Morbid Obesity - Operations
- Postgastrectomy Syndromes - Revisional Procedures

9. Alimentary Tract – Small Intestine

Diseases/Conditions

CORE

- Enterocutaneous Fistula
- Intussusception
- Meckel's Diverticulum
- Mesenteric Ischemia - Acute (Arterial, Venous, and Nonocclusive)
- Miscellaneous Small Intestinal Neoplasms
- Paralytic Ileus
- Pneumatosis
- Radiation Enteritis
- Small Intestinal Crohn's Disease - Surgical Management
- Small Intestinal Obstruction
- Small Intestinal Polyps

ADVANCED

- Enteric Infections/Blind Loop Syndrome
- Short Bowel Syndrome
- Small Intestinal Adenocarcinoma

Operations/Procedures

CORE

- Adhesiolysis
- Feeding Jejunostomy
- Ileostomy
- Ileostomy Closure
- Small Intestinal Resection

ADVANCED

- Strictureplasty for Crohn's Disease
- Superior Mesenteric Artery Embolectomy/Thrombectomy

10. Alimentary Tract – Large Intestine

Diseases/Conditions

CORE

- Appendiceal Neoplasms
- Appendicitis
- Clostridium Difficile-Associated Diarrhea
- Colitis - Ischemic
- Colon Cancer
- Colonic Crohn's Disease - Surgical Management
- Colonic Polyps
- Colonic Volvulus
- Diverticulitis
- Gastrointestinal Bleeding - Lower
- Obstruction - Large Intestinal
- Ulcerative Colitis - Surgical Management

ADVANCED

- Colon Neoplasms - Miscellaneous
- Constipation - Functional
- Irritable Bowel Syndrome
- Polyposis Syndromes

Operations/Procedures

CORE

- Appendectomy
- Colectomy - Partial
- Colectomy - Subtotal (with Ileorectal Anastomosis/Ileostomy)
- Colostomy
- Colostomy Closure

ADVANCED

- Coloproctectomy - Total (with Ileorectal Pull-through)

11. Alimentary Tract – Anorectal

Diseases/Conditions

CORE

- Anal Cancer
- Anal Fissure
- Anorectal Abscess and Fistulae
- Hemorrhoids
- Perianal Condylomas
- Rectal Cancer

ADVANCED

- Anal Dysplasia/Sexually Transmitted Diseases
- Fecal Incontinence
- Rectal Prolapse

Operations/Procedures

CORE

- Anal Fistulotomy/Seton Placement
- Anal Sphincterotomy - Internal
- Anorectal Abscess - Drainage
- Banding for Internal Hemorrhoids
- Hemorrhoidectomy
- Perianal Condylomas - Excision

ADVANCED

- Anal Cancer - Excision
- Anorectal Fistulae - Complex Repair
- Incontinence/Constipation - Operation
- Rectal Cancer - Abdominoperineal Resection and Pelvic Exenteration
- Rectal Cancer - Transanal Resection
- Rectal Prolapse - Repair

12. Endoscopy

Operations/Procedures

CORE

- Bronchoalveolar Lavage
- Bronchoscopy
- Colonoscopy
- Esophagogastroduodenoscopy
- Laryngoscopy
- Proctoscopy and Sigmoidoscopy

13. Breast

Diseases/Conditions

CORE

- Atypical Ductal Hyperplasia
- Atypical Lobular Hyperplasia and Lobular Carcinoma In Situ
- Benign Disease - Fat Necrosis
- Benign Disease - Fibroadenoma
- Benign Disease - Fibrocystic Breast Changes
- Benign Disease - Galactocele
- Benign Disease - Gynecomastia
- Benign Disease - Intraductal Papilloma
- Benign Disease - Radial Scar
- Benign Inflammatory Disease - Mastitis and Abscess
- Benign Inflammatory Disease - Mondor Disease
- Breast Cancer - Hereditary
- Breast Cancer - Inflammatory
- Breast Cancer - Invasive Carcinoma (Ductal, Lobular, All Variants)
- Breast Cancer - Male
- Breast Cancer - Paget's Disease of the Nipple
- Breast Cancer During Pregnancy and Lactation
- Breast Mass
- Breast Pain
- Ductal Carcinoma In Situ
- Mammographic Abnormalities
- Nipple Discharge
- Phyllodes Tumor

ADVANCED

- Postmastectomy Reconstruction Options

Operations/Procedures

CORE

- Axillary Sentinel Lymph Node Biopsy and Lymphadenectomy
- Breast Biopsy with or without Needle Localization

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13. Breast (cont.)

Operations/Procedures

CORE (CONT.)

- Breast Cyst - Aspiration
- Duct Excision
- Mastectomy - Partial
- Mastectomy - Simple, Modified Radical, and Radical

ADVANCED

- Breast Biopsy - Image-Guided

14. Endocrine

Diseases/Conditions

CORE

- Addisonian Crisis
- Adrenal Mass
- Hyperaldosteronism - Primary
- Hypercortisolism - Cushing Syndrome/Disease
- Hyperparathyroidism
- Hyperthyroidism
- Hypothyroidism - Postoperative
- Pheochromocytoma
- Thyroid Cancer
- Thyroid Nodule
- Thyroiditis

ADVANCED

- Adrenal Cancer
- Multiple Endocrine Neoplasias
- Parathyroid Cancer

Operations/Procedures

CORE

- Parathyroidectomy
- Thyroidectomy - Partial or Total

ADVANCED

- Adrenalectomy
- Ultrasound of the Thyroid

15. Skin and Soft Tissue

Diseases/Conditions

CORE

- Adnexal Tumors of the Skin
- Cellulitis
- Hidradenitis
- Melanoma and Nevi
- Necrotizing Soft Tissue Infections
- Non-Melanoma Skin Cancers
- Paronychia and Felon
- Pilonidal Cyst/Sinus
- Soft Tissue Masses - Evaluation
- Surgical Site Infection

ADVANCED

- Decubitus Ulcer
- Dermatofibrosarcoma Protruberans (DFSP)
- Lymphedema/Lymphangitis
- Soft Tissue Sarcomas

Operations/Procedures

CORE

- Melanoma - Wide Local Excision
- Pilonidal Cystectomy
- Sentinel Lymph Node Biopsy for Melanoma
- Skin/Soft Tissue Lesions - Excisional and Incisional Biopsy
- Soft Tissue Infections - Incision, Drainage, Debridement

ADVANCED

- Iliioinguinal-Femoral Lymphadenectomy
- Soft Tissue Sarcoma - Resection

16. Surgical Critical Care

Diseases/Conditions

CORE

- Abdominal Compartment Syndrome
- Anaphylaxis
- ARDS and Respiratory Failure
- Brain Death
- Cardiac Arrhythmias - Common
- Cardiac Failure
- Cardiogenic Shock
- Coagulopathy
- Derangements of Electrolytes and Acid-Base Balance
- Endocrine Dysfunction
- Gastrointestinal Failure
- Hepatic Failure and Hepatorenal Syndrome
- Hypovolemic Shock
- Neurogenic Shock
- Neurologic Dysfunction
- Pneumonia - Hospital-Acquired
- Postoperative Delirium
- Renal Failure
- Septic Shock

Operations/Procedures

CORE

- Airway Management/Ventilator Management
- Arterial Catheter Placement
- Central Venous Catheter Placement
- Compartment Pressures (Abdomen, Extremity) - Measurement
- Damage Control Laparotomy and Management of the Open Abdomen
- Defibrillation and Cardioversion
- Endotracheal Intubation
- Enteral Feeding Tube Placement
- Invasive Hemodynamic Monitoring
- Oxygen Administration Devices
- Paracentesis

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16. Surgical Critical Care (cont.)

Operations/Procedures

CORE (CONT.)

- Pulmonary Artery Catheter Placement
- Thoracentesis
- Ultrasound Use for Intravascular Access
- Urinary Catheterization

ADVANCED

- Cardiac Pacing
- Temporary Transvenous Pacemaker

17. Trauma

Diseases/Conditions

CORE

- Aortic Injury
- Bladder Injury
- Burns
- Cardiac Tamponade
- Colon and Rectal Injury
- Diaphragmatic Injury
- Esophageal Injury
- Frostbite and Hypothermia
- Gastric Injury
- Geriatric Trauma
- Hemothorax and Pneumothorax
- Hepatic Injury
- Initial Assessment and Management of Trauma
- Myocardial Contusion
- Pancreatic and Duodenal Injury
- Pediatric Trauma
- Pelvic Fractures
- Pulmonary Injury
- Renal Injury
- Retroperitoneal Hematoma
- Rib and Sternal Fractures
- Small Intestinal Injury
- Splenic Injury
- Trauma in Pregnancy
- Upper Aerodigestive Tract Injury
- Ureteral Injury
- Vascular Injury - Abdomen
- Vascular Injury - Extremities
- Vascular Injury - Neck
- Vascular Injury - Thorax

ADVANCED

- Animal and Insect Bites and Stings
- Brachial Plexus Injury
- Extremity Fractures and Traumatic Amputations
- Head Injury - Penetrating and Closed

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17. Trauma (cont.)

Diseases/Conditions

ADVANCED (CONT.)

- Human Bites
- Smoke Inhalation Injury and Carbon Monoxide Poisoning
- Spine Fracture
- Sprains, Strains, and Dislocations
- Tracheal and Bronchial Injury
- Urethral Injury

Operations/Procedures

CORE

- Abdominal Aorta or Vena Cava Injury - Repair
- Bladder Injury - Repair
- Cardiac Injury - Repair
- Carotid Artery Injury - Repair
- Duodenal Trauma - Management
- Esophageal Injury - Operation
- Exploratory Laparoscopy
- Exploratory Laparotomy
- Fasciotomy for Injury
- Focused Abdominal Sonography for Trauma (FAST)
- Gastrointestinal Tract Injury - Operation
- Hepatic Injury - Packing and Repair
- Neck Exploration for Injury
- Pancreatic Injury - Operation
- Renal Injury - Repair/Resection
- Splenectomy/Splenorrhaphy
- Temporary Closure of the Abdomen
- Thoracoscopy for Management of Hemothorax
- Truncal and Peripheral Vessels - Repair
- Ureteral Injury - Repair
- Wounds, Major - Debride/Suture

ADVANCED

- Burn Debridement and Grafting of Major Burns
- Escharotomy for Burn Injury
- Hepatic Injury - Resection
- Tendon - Repair

18. Vascular – Arterial Disease

Diseases/Conditions

CORE

- Acute Arterial Thrombosis
- Acute Limb Ischemia
- Aortic Thrombosis
- Aortoiliac Disease
- Cerebrovascular Disease
- Compartment Syndromes
- Diabetic Foot Infections
- Peripheral Arterial Emboli
- Peripheral Vascular Disease and Claudication

ADVANCED

- Aortic Dissection
- Arterial Aneurysms - Aortic
- Arterial Aneurysms - Peripheral
- Arterial Aneurysms - Visceral
- Chronic Visceral Disease
- Hypercoagulable Syndromes
- Nonatherosclerotic Occlusive Diseases
- Renal Artery Disease
- Thoracic Outlet Syndrome
- Vascular Graft Infections

Operations/Procedures

CORE

- Amputations - Lower Extremity
- Embolectomy/Thrombectomy - Arterial
- Femoral-popliteal Bypass

ADVANCED

- Abdominal Aortic Aneurysm - Endovascular/
Open Repair
- Aortofemoral Bypass
- Arterial Occlusive Disease - Endarterectomy
- Carotid Endarterectomy

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18. Vascular – Arterial Disease (cont.)

Operations/Procedures

ADVANCED (CONT.)

- Endovascular - Therapeutic, Including Thrombolysis
- Extra-anatomic Bypass
- Femoral Aneurysm - Repair
- Graft-enteric Fistula - Management
- Infrapopliteal Bypass
- Infrarenal and Aortoiliac Aneurysm - Repair
- Popliteal Aneurysm - Repair
- Pseudoaneurysm - Repair
- Suprarenal Abdominal Aortic Aneurysm - Repair
- Ultrasound in Diagnosis of Vascular Diseases
- Visceral Occlusive Disease - Operation

19. Vascular – Venous

Diseases/Conditions

CORE

- Thrombophlebitis - Acute and Suppurative
- Varicose Veins
- Venous Stasis/Chronic Venous Insufficiency
- Venous Thrombosis/Pulmonary Embolism

Operations/Procedures

CORE

- Sclerotherapy - Peripheral Vein
- Vena Caval Filter - Insertion
- Venous Insufficiency/Varicose Veins - Operation

20. Vascular – Access

Diseases/Conditions

CORE

- Vascular Access for Dialysis
- Venous Access for Long-Term Therapy

Operations/Procedures

CORE

- Arteriovenous Graft/Fistula
- Percutaneous Vascular Access
- Vascular Exposure
- Venous Access Devices - Insertion

21. Transplantation

Diseases/Conditions

ADVANCED

- Donor Selection Criteria
- Indications for Transplantation (Kidney, Liver, Pancreas)
- Opportunistic Infections
- Organ Preservation
- Post-Transplant Malignancies

Operations/Procedures

ADVANCED

- En Bloc Abdominal Organ Retrieval
- Live Donor Hepatectomy
- Live Donor Nephrectomy
- Liver Transplantation
- Pancreas Transplantation
- Renal Transplantation

22. Thoracic Surgery

Diseases/Conditions

CORE

- Pleural Effusion/Empyema
- Pneumothorax

ADVANCED

- Chylothorax
- Lung Cancer
- Mediastinal Tumors and Cysts
- Mediastinitis
- Metastatic Tumors of the Lung
- Superior Vena Cava Syndrome
- Tracheoesophageal Fistula
- Tracheoinnominate Fistula

Operations/Procedures

CORE

- Chest Tube Placement and Management
- Exploratory Thoracotomy - Open and Thoracoscopic
- Partial Pulmonary Resection - Open and Thoracoscopic
- Pericardial Window for Drainage

ADVANCED

- Empyema - Management
- Pleurodesis

23. Pediatric Surgery

Diseases/Conditions

CORE

- Abdominal Mass
- Abdominal Pain - Acute
- Appendicitis
- Gastrointestinal Bleeding - Lower
- Hypertrophic Pyloric Stenosis
- Inguinal Hernia
- Intussusception
- Malrotation
- Meckel's Diverticulum
- Umbilical Hernia

ADVANCED

- Aerodigestive Tract Foreign Bodies
- Biliary Atresia
- Choledochal Cysts
- Congenital Aganglionosis (Hirschsprung's Disease)
- Congenital Diaphragmatic Hernia
- Cryptorchidism
- Duodenal Atresia/Stenosis
- Esophageal Atresia/Tracheoesophageal Fistula
- Gastroschisis/Omphalocele
- Imperforate Anus
- Intestinal Atresia/Meconium Ileus
- Necrotizing Enterocolitis
- Neuroblastoma
- Wilms Tumor

Operations/Procedures

CORE

- Inguinal Hernia - Repair
- Intussusception - Operation
- Malrotation - Operation
- Meckel's Diverticulum - Excision
- Pyloromyotomy
- Umbilical Hernia - Repair

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23. Pediatric Surgery (cont.)

ADVANCED

- Antireflux Procedures
- Branchial Cleft Anomaly - Excision
- Chest Wall Deformity - Repair
- Diaphragmatic Hernia - Repair
- Esophageal Atresia/Tracheoesophageal Fistula - Repair
- Hirschsprung's Disease - Operation
- Imperforate Anus - Operation
- Intestinal Atresia/Stenosis - Repair
- Meconium Ileus - Operation
- Necrotizing Enterocolitis - Operation
- Omphalocele/Gastroschisis - Repair
- Orchiopexy
- Thyroglossal Duct Cyst - Excision
- Wilms Tumor/Neuroblastoma - Excision

24. Plastic Surgery

Diseases/Conditions

CORE

- Abdominal Wall Reconstruction

Operations/Procedures

CORE

- Complex Wound Closure
- Skin Grafting

25. Genitourinary

Diseases/Conditions

CORE

- Hydrocele

ADVANCED

- Genitourinary Neoplasms
- Obstructive Uropathy and Urolithiasis
- Ureteral Injury - Iatrogenic

Operations/Procedures

CORE

- Cystostomy
- Hydrocelectomy
- Nephrectomy
- Orchiectomy
- Ureteral Injury, Iatrogenic - Repair

26. Gynecology and Obstetrics

Diseases/Conditions

CORE

- Ectopic Pregnancy
- Ovarian Mass/Cyst - Incidental
- Pelvic Inflammatory Disease

ADVANCED

- Endometriosis
- Ovarian Neoplasms - Benign and Malignant
- Uterine Neoplasms - Benign and Malignant

Operations/Procedures

CORE

- Hysterectomy
- Salpingo-oophorectomy
- Surgical Considerations of the Pregnant Patient

ADVANCED

- Cesarean Section

27. Head and Neck

Diseases/Conditions

CORE

- Neck Mass - Evaluation
- Upper Airway Obstruction

ADVANCED

- Lymphoma/Hodgkin's Disease
- Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer

Operations/Procedures

CORE

- Cricothyroidotomy
- Lymph Node Biopsy
- Tracheostomy

ADVANCED

- Modified Neck Dissection
- Parotidectomy

28. Nervous System

Diseases/Conditions

CORE

- Pain, Acute - Management

ADVANCED

- Pain, Chronic - Management

Operations/Procedures

CORE

- Nerve Block - Digital
- Nerve Block - Intercostal

ADVANCED

- Nerve Block(s) - Peripheral other than Digital

DISEASES/CONDITIONS BY LEVEL

DISEASES/CONDITIONS - CORE

Abdomen - General

Abdominal Pain - Acute
Abdominal Pain - Chronic
Bacterial Peritonitis - Spontaneous
Intra-abdominal Abscess
Rectus Sheath Hematoma

Abdomen - Hernia

Inguinal and Femoral Hernias
Miscellaneous Hernias
Prosthetic Mesh Infections - Management
Umbilical and Epigastric Hernias
Ventral Hernia

Abdomen - Biliary

Bile Duct Injury - Iatrogenic
Bile Duct Neoplasms
Cholangitis
Cholecystitis - Acalculous
Cholecystitis - Acute and Chronic
Choledochal Cyst
Choledocholithiasis
Gallbladder Cancer
Gallbladder Polyps
Gallstone Ileus
Jaundice - Obstructive
Pancreatitis - Biliary

Abdomen - Liver

Hepatic Abscess
Hepatic Mass - Evaluation
Hepatic Neoplasms - Benign
Hepatic Neoplasms - Malignant
Hepatic Neoplasms - Metastatic

Abdomen - Pancreas

Pancreatic Neoplasms - Cystic
Pancreatic Neoplasms - Endocrine
Pancreatic Neoplasms - Exocrine
Pancreatic Pseudocyst
Pancreatitis - Acute/Pancreatic Necrosis/Abscess

Abdomen - Spleen

Idiopathic Thrombocytopenic Purpura
Postsplenectomy Sepsis

Alimentary Tract - Esophagus

Achalasia
Dysphagia
Esophageal Neoplasms - Benign
Esophageal Neoplasms - Malignant
Esophageal Perforation - Iatrogenic
Gastroesophageal Reflux/Barrett's Esophagus
Hiatal Hernias
Mallory-Weiss Syndrome
Stricture

Alimentary Tract - Stomach

Gastric Bezoars and Foreign Bodies
Gastric Cancer
Gastrointestinal Bleeding - Upper
GIST and Miscellaneous Neoplasms
Morbid Obesity
Peptic Ulcer Disease with Complications
Stress Gastritis

Alimentary Tract - Small Intestine

Enterocutaneous Fistula
Intussusception
Meckel's Diverticulum
Mesenteric Ischemia - Acute (Arterial, Venous, and Nonocclusive)
Miscellaneous Small Intestinal Neoplasms
Paralytic Ileus
Pneumatosis
Radiation Enteritis
Small Intestinal Crohn's Disease - Surgical Management
Small Intestinal Obstruction
Small Intestinal Polyps

Alimentary Tract - Large Intestine

Appendiceal Neoplasms
Appendicitis
Clostridium Difficile-associated Diarrhea
Colitis - Ischemic
Colon Cancer
Colonic Crohn's Disease - Surgical Management
Colonic Polyps
Colonic Volvulus
Diverticulitis
Gastrointestinal Bleeding - Lower
Obstruction - Large Intestinal
Ulcerative Colitis - Surgical Management

Alimentary Tract - Anorectal

Anal Cancer
Anal Fissure
Anorectal Abscess and Fistulae
Hemorrhoids
Perianal Condylomas
Rectal Cancer

Breast

Atypical Ductal Hyperplasia
Atypical Lobular Hyperplasia and Lobular Carcinoma In Situ
Benign Disease - Fat Necrosis
Benign Disease - Fibroadenoma
Benign Disease - Fibrocystic Breast Changes
Benign Disease - Galactocele
Benign Disease - Gynecomastia
Benign Disease - Intraductal Papilloma
Benign Disease - Radial Scar
Benign Inflammatory Disease - Mastitis and Abscess
Benign Inflammatory Disease - Mondor Disease
Breast Cancer - Hereditary
Breast Cancer - Inflammatory
Breast Cancer - Invasive Carcinoma (Ductal, Lobular, All Variants)
Breast Cancer - Male
Breast Cancer - Paget's Disease of the Nipple
Breast Cancer During Pregnancy and Lactation
Breast Mass
Breast Pain
Ductal Carcinoma In Situ
Mammographic Abnormalities
Nipple Discharge
Phyllodes Tumor

DISEASES/CONDITIONS - CORE (CONT.)

Endocrine

Addisonian Crisis
Adrenal Mass
Hyperaldosteronism - Primary
Hypercortisolism - Cushing Syndrome/Disease
Hyperparathyroidism
Hyperthyroidism
Hypothyroidism - Postoperative
Pheochromocytoma
Thyroid Cancer
Thyroid Nodule
Thyroiditis

Skin and Soft Tissue

Adnexal Tumors of the Skin
Cellulitis
Hidradenitis
Melanoma and Nevi
Necrotizing Soft Tissue Infections
Non-Melanoma Skin Cancers
Paronychia and Felon
Pilonidal Cyst/Sinus
Soft Tissue Masses - Evaluation
Surgical Site Infection

Surgical Critical Care

Abdominal Compartment Syndrome
Anaphylaxis
ARDS and Respiratory Failure
Brain Death
Cardiac Arrhythmias - Common
Cardiac Failure
Cardiogenic Shock
Coagulopathy
Derangements of Electrolytes and Acid-Base Balance
Endocrine Dysfunction
Gastrointestinal Failure
Hepatic Failure and Hepatorenal Syndrome
Hypovolemic Shock
Neurogenic Shock
Neurologic Dysfunction
Pneumonia - Hospital Acquired
Postoperative Delirium
Renal Failure
Septic Shock

Trauma

Aortic Injury
Bladder Injury
Burns
Cardiac Tamponade
Colon and Rectal Injury
Diaphragmatic Injury
Esophageal Injury
Frostbite and Hypothermia
Gastric Injury
Geriatric Trauma
Hemothorax and Pneumothorax
Hepatic Injury
Initial Assessment and Management of Trauma
Myocardial Contusion
Pancreatic and Duodenal Injury

(continued next page)

Trauma (cont.)

Pediatric Trauma
Pelvic Fractures
Pulmonary Injury
Renal Injury
Retroperitoneal Hematoma
Rib and Sternal Fractures
Small Intestinal Injury
Splenic Injury
Trauma in Pregnancy
Upper Aerodigestive Tract Injury
Ureteral Injury
Vascular Injury - Abdomen
Vascular Injury - Extremities
Vascular Injury - Neck
Vascular Injury - Thorax

Vascular - Arterial Disease

Acute Arterial Thrombosis
Acute Limb Ischemia
Aortic Thrombosis
Aortoiliac Disease
Cerebrovascular Disease
Compartment Syndromes
Diabetic Foot Infections
Peripheral Arterial Emboli
Peripheral Vascular Disease and Claudication

Vascular - Venous

Thrombophlebitis - Acute and Suppurative
Varicose Veins
Venous Stasis/Chronic Venous Insufficiency
Venous Thrombosis/Pulmonary Embolism

Vascular - Access

Vascular Access for Dialysis
Venous Access for Long-Term Therapy

Thoracic Surgery

Pleural Effusion/Empyema
Pneumothorax

Pediatric Surgery

Abdominal Mass
Abdominal Pain - Acute
Appendicitis
Gastrointestinal Bleeding - Lower
Hypertrophic Pyloric Stenosis
Inguinal Hernia
Intussusception
Malrotation
Meckel's Diverticulum
Umbilical Hernia

Plastic Surgery

Abdominal Wall Reconstruction

Genitourinary

Hydrocele

Gynecology and Obstetrics

Ectopic Pregnancy
Ovarian Mass/Cyst - Incidental
Pelvic Inflammatory Disease

Head and Neck

Neck Mass - Evaluation
Upper Airway Obstruction

Nervous System

Pain, Acute - Management

DISEASES/CONDITIONS - ADVANCED

Abdomen - General

Ascites - Chylous
Desmoids/Fibromatoses
Mesenteric Cyst
Peritoneal Neoplasms - Carcinomatosis
Peritoneal Neoplasms - Pseudomyxoma peritonei

Abdomen - Biliary

Ampullary Stenosis/Sphincter of Oddi Dysfunction
Primary Sclerosing Cholangitis

Abdomen - Liver

Budd-Chiari Syndrome
Cirrhosis/Portal Hypertension (Ascites)
Esophageal Varices

Abdomen - Pancreas

Intraductal Papillary Mucinous Neoplasms
Pancreas Divisum
Pancreatitis - Autoimmune
Pancreatitis - Chronic (Including Hereditary Pancreatitis)/
Pancreatic Insufficiency
Periampullary Neoplasms - Other

Abdomen - Spleen

Hemolytic Anemias
Hypersplenism - Secondary and Splenomegaly
Splenic Abscess, Cysts and Neoplasms

Alimentary Tract - Esophagus

Esophageal Caustic Ingestion and Foreign Bodies
Esophageal Diverticula
Esophageal Motility Disorders other than Achalasia
Esophageal Perforation - Spontaneous

Alimentary Tract - Stomach

Gastroparesis
Postgastrectomy Syndromes

Alimentary Tract - Small Intestine

Enteric Infections/Blind Loop Syndrome
Short Bowel Syndrome
Small Intestinal Adenocarcinoma

Alimentary Tract - Large Intestine

Colon Neoplasms - Miscellaneous
Constipation - Functional
Irritable Bowel Syndrome
Polyposis Syndromes

Alimentary Tract - Anorectal

Anal Dysplasia/Sexually Transmitted Diseases
Fecal Incontinence
Rectal Prolapse

Breast

Postmastectomy Reconstruction Options

Endocrine

Adrenal Cancer
Multiple Endocrine Neoplasias
Parathyroid Cancer

Skin and Soft Tissue

Decubitus Ulcer
Dermatofibrosarcoma Protruberans (DFSP)
Lymphedema/Lymphangitis
Soft Tissue Sarcomas

Trauma

Animal and Insect Bites and Stings
Brachial Plexus Injury
Extremity Fractures and Traumatic Amputations
Head Injury - Penetrating and Closed
Human Bites
Smoke Inhalation Injury and Carbon Monoxide Poisoning
Spine Fracture
Sprains, Strains, and Dislocations
Tracheal and Bronchial Injury
Urethral Injury

DISEASES/CONDITIONS - ADVANCED (CONT.)

Vascular - Arterial Disease

Aortic Dissection
Arterial Aneurysms - Aortic
Arterial Aneurysms - Peripheral
Arterial Aneurysms - Visceral
Chronic Visceral Disease
Hypercoagulable Syndromes
Nonatherosclerotic Occlusive Diseases
Renal Artery Disease
Thoracic Outlet Syndrome
Vascular Graft Infections

Transplantation

Donor Selection Criteria
Indications for Transplantation (Kidney, Liver, Pancreas)
Opportunistic Infections
Organ Preservation
Post-Transplant Malignancies

Thoracic Surgery

Chylothorax
Lung Cancer
Mediastinal Tumors and Cysts
Mediastinitis
Metastatic Tumors of the Lung
Superior Vena Cava Syndrome
Tracheoesophageal Fistula
Tracheoinnominate Fistula

Pediatric Surgery

Aerodigestive Tract Foreign Bodies
Biliary Atresia
Choledochal Cysts
Congenital Aganglionosis (Hirschsprung's Disease)
Congenital Diaphragmatic Hernia
Cryptorchidism
Duodenal Atresia/Stenosis
Esophageal Atresia/Tracheoesophageal Fistula
Gastroschisis/Omphalocele
Imperforate Anus
Intestinal Atresia/Meconium Ileus
Necrotizing Enterocolitis
Neuroblastoma
Wilms Tumor

Genitourinary

Genitourinary Neoplasms
Obstructive Uropathy and Urolithiasis
Ureteral Injury - Iatrogenic

Gynecology and Obstetrics

Endometriosis
Ovarian Neoplasm - Benign and Malignant
Uterine Neoplasms - Benign and Malignant

Head and Neck

Lymphoma/Hodgkin's Disease
Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer

Nervous System

Pain, Chronic - Management

OPERATIONS/PROCEDURES BY LEVEL

OPERATIONS/PROCEDURES - CORE

Abdomen - General

Diagnostic Laparoscopy
Intra-abdominal Abscess - Drainage
Peritoneal Dialysis Catheter Insertion
Peritoneal Lesion - Biopsy

Abdomen - Hernia

Diaphragmatic Hernia - Repair
Inguinal and Femoral Hernia - Repair
Miscellaneous Hernias - Repair
Ventral Hernia - Repair

Abdomen - Biliary

Cholecystectomy with or without Cholangiography
Cholecystostomy
Choledochoenteric Anastomosis
Choledochoscopy
Common Bile Duct Exploration - Laparoscopic
Common Bile Duct Exploration - Open

Abdomen - Liver

Hepatic Abscess - Drainage
Hepatic Biopsy

Abdomen - Pancreas

Pancreatectomy - Distal
Pancreatic Debridement
Pancreatic Pseudocyst - Drainage

Abdomen - Spleen

Splenectomy
Splenectomy/Splenorrhaphy - Partial

Alimentary Tract - Esophagus

Antireflux Procedures

Alimentary Tract - Stomach

Duodenal Perforation - Repair
Gastrectomy - Partial/Total
Gastrostomy
Vagotomy and Drainage

Alimentary Tract - Small Intestine

Adhesiolysis
Feeding Jejunostomy
Ileostomy
Ileostomy Closure
Small Intestinal Resection

Alimentary Tract - Large Intestine

Appendectomy
Colectomy - Partial
Colectomy - Subtotal (with Ileorectal Anastomosis/Ileostomy)
Colostomy
Colostomy Closure

Alimentary Tract - Anorectal

Anal Fistulotomy/Seton Placement
Anal Sphincterotomy - Internal
Anorectal Abscess - Drainage
Banding for Internal Hemorrhoids
Hemorrhoidectomy
Perianal Condylomas - Excision

Endoscopy

Bronchoalveolar Lavage
Bronchoscopy
Colonoscopy
Esophagogastroduodenoscopy
Laryngoscopy
Proctoscopy and Sigmoidoscopy

OPERATIONS/PROCEDURES - CORE (CONT.)

Breast

Axillary Sentinel Lymph Node Biopsy and Lymphadenectomy
Breast Biopsy with or without Needle Localization
Breast Cyst - Aspiration
Duct Excision
Mastectomy - Partial
Mastectomy - Simple, Modified Radical, and Radical

Endocrine

Parathyroidectomy
Thyroidectomy - Partial or Total

Skin and Soft Tissue

Melanoma - Wide Local Excision
Pilonidal Cystectomy
Sentinel Lymph Node Biopsy for Melanoma
Skin/Soft Tissue Lesions - Excisional and Incisional Biopsy
Soft Tissue Infections - Incision, Drainage, Debridement

Surgical Critical Care

Airway Management/Ventilator Management
Arterial Catheter Placement
Central Venous Catheter Placement
Compartment Pressures (Abdomen, Extremity) - Measurement
Damage Control Laparotomy and Management of the Open Abdomen
Defibrillation and Cardioversion
Endotracheal Intubation
Enteral Feeding Tube Placement
Invasive Hemodynamic Monitoring
Oxygen Administration Devices
Paracentesis
Pulmonary Artery Catheter Placement
Thoracentesis
Ultrasound Use for Intravascular Access
Urinary Catheterization

Trauma

Abdominal Aorta or Vena Cava Injury - Repair
Bladder Injury - Repair
Cardiac Injury - Repair
Carotid Artery Injury - Repair
Duodenal Trauma - Management
Esophageal Injury - Operation
Exploratory Laparoscopy
Exploratory Laparotomy
Fasciotomy for Injury
Focused Abdominal Sonography for Trauma (FAST)
Gastrointestinal Tract Injury - Operation
Hepatic Injury - Packing and Repair
Neck Exploration for Injury
Pancreatic Injury - Operation
Renal Injury - Repair/Resection
Splenectomy/Splenorrhaphy
Temporary Closure of the Abdomen
Thoracoscopy for Management of Hemothorax
Truncal and Peripheral Vessels - Repair
Ureteral Injury - Repair
Wounds, Major - Debride/Suture

Vascular - Arterial Disease

Amputations - Lower Extremity
Embolectomy/Thrombectomy - Arterial
Femoral-popliteal Bypass

Vascular - Venous

Sclerotherapy - Peripheral Vein
Vena Caval Filter - Insertion
Venous Insufficiency/Varicose Veins - Operation

OPERATIONS/PROCEDURES - CORE (CONT.)

Vascular - Access

Arteriovenous Graft/Fistula
Percutaneous Vascular Access
Vascular Exposure
Venous Access Devices - Insertion

Thoracic Surgery

Chest Tube Placement and Management
Exploratory Thoracotomy - Open and Thoracoscopic
Partial Pulmonary Resections - Open and Thoracoscopic
Pericardial Window for Drainage

Pediatric Surgery

Inguinal Hernia - Repair
Intussusception - Operation
Malrotation - Operation
Meckel's Diverticulum - Excision
Pyloromyotomy
Umbilical Hernia - Repair

Plastic Surgery

Complex Wound Closure
Skin Grafting

Genitourinary

Cystostomy
Hydrocelectomy
Nephrectomy
Orchiectomy
Ureteral Injury, Iatrogenic - Repair

Gynecology and Obstetrics

Hysterectomy
Salpingo-oophorectomy
Surgical Considerations of the Pregnant Patient

Head and Neck

Cricothyroidotomy
Lymph Node Biopsy
Tracheostomy

Nervous System

Nerve Block - Digital
Nerve Block - Intercostal

OPERATIONS/PROCEDURES - ADVANCED

Abdomen - Hernia

Abdominal Wall Reconstruction - Components Separation

Abdomen - Biliary

Bile Duct Cancer - Operation

Bile Duct Injury - Acute Repair

Bile Duct Neoplasms - Operation

Gallbladder Cancer - Operation

Transduodenal Sphincteroplasty

Ultrasound of the Biliary Tree

Abdomen - Liver

Hepatic Ultrasound - Intraoperative

Segmentectomy/Lobectomy - Laparoscopic

Segmentectomy/Lobectomy - Open

Abdomen - Pancreas

Ampullary Resection for Tumor

Pancreatectomy - Frey and Beger Procedures

Pancreatectomy - Total

Pancreatic Ultrasound - Intraoperative

Pancreaticoduodenectomy

Pancreaticojejunostomy - Longitudinal

Alimentary Tract - Esophagus

Cricopharyngeal Myotomy with Zenker's Diverticulum - Excision

Esophageal Perforation - Repair/Resection

Esophagectomy/Esophagogastrectomy

Esophagomyotomy (Heller)

Paraesophageal Hernia - Laparoscopic Repair

Paraesophageal Hernia - Open Repair

Alimentary Tract - Stomach

Morbid Obesity - Operations

Postgastrectomy Syndromes - Revisional Procedures

Alimentary Tract - Small Intestine

Stricturoplasty for Crohn's Disease

Superior Mesenteric Artery Embolectomy/Thrombectomy

Alimentary Tract - Large Intestine

Coloproctectomy - Total (with Ileorectal Pull-Through)

Alimentary Tract - Anorectal

Anal Cancer - Excision

Anorectal Fistulae - Complex Repair

Incontinence/Constipation - Operation

Rectal Cancer - Abdominoperineal Resection and Pelvic Exenteration

Rectal Cancer - Transanal Resection

Rectal Prolapse - Repair

Breast

Breast Biopsy - Image-guided

Endocrine

Adrenalectomy

Ultrasound of the Thyroid

Skin and Soft Tissue

Ilioinguinal-Femoral Lymphadenectomy

Soft Tissue Sarcoma - Resection

Surgical Critical Care

Cardiac Pacing

Temporary Transvenous Pacemaker

Trauma

Burn Debridement and Grafting of Major Burns

Escharotomy for Burn Injury

Hepatic Injury - Resection

Tendon - Repair

OPERATIONS/PROCEDURES - ADVANCED (CONT.)

Vascular - Arterial Disease

Abdominal Aortic Aneurysm - Endovascular/Open Repair
Aortofemoral Bypass
Arterial Occlusive Disease - Endarterectomy
Carotid Endarterectomy
Endovascular - Therapeutic, Including Thrombolysis
Extra-anatomic Bypass
Femoral Aneurysm - Repair
Graft-enteric Fistula - Management
Infrapopliteal Bypass
Infrarenal and Aortoiliac Aneurysm - Repair
Popliteal Aneurysm - Repair
Pseudoaneurysm - Repair
Suprarenal Abdominal Aortic Aneurysm - Repair
Ultrasound in Diagnosis of Vascular Diseases
Visceral Occlusive Disease - Operation

Transplantation

En Bloc Abdominal Organ Retrieval
Live Donor Hepatectomy
Live Donor Nephrectomy
Liver Transplantation
Pancreas Transplantation
Renal Transplantation

Thoracic Surgery

Empyema - Management
Pleurodesis

Pediatric Surgery

Antireflux Procedures
Branchial Cleft Anomaly - Excision
Chest Wall Deformity - Repair
Diaphragmatic Hernia - Repair
Esophageal Atresia/Tracheoesophageal Fistula - Repair
Hirschsprung's Disease - Operation
Imperforate Anus - Operation
Intestinal Atresia/Stenosis - Repair
Meconium Ileus - Operation
Necrotizing Enterocolitis - Operation
Omphalocele/Gastroschisis - Repair
Orchiopexy
Thyroglossal Duct Cyst - Excision
Wilms Tumor/Neuroblastoma - Excision

Gynecology and Obstetrics

Cesarean Section

Head and Neck

Modified Neck Dissection
Parotidectomy

Nervous System

Nerve Block(s) - Peripheral other than Digital

1. Anesthesia

- Anesthesia, General - Agents and Techniques
- Anesthesia, Regional and Local - Agents and Techniques
- Choice of Anesthesia
- Conscious Sedation - Agents and Techniques
- Intraoperative Monitoring and Common Intraoperative Problems
- Postoperative Pain Management

2. Biostatistics and Evaluation of Evidence

- Clinical Trials
- Evaluating the Quality and Applicability of a Study
- How Data is Expressed and Summarized
- Levels of Evidence
- Outcomes
- Research Design
- Surveys and Qualitative Research
- Tests of Significance

3. Fluids, Electrolytes, and Acid-Base Balance

- Body Fluid Compartments and Fluid Homeostasis
- Hypocalcemia and Hypercalcemia
- Hypokalemia and Hyperkalemia
- Hyponatremia and Hypernatremia
- Magnesium and Phosphorous Disorders
- Normal Acid-Base Regulation and Acid-Base Disorders

4. Geriatric Surgery and End-of-Life Care

- Advanced Directives, DNR Orders, and Power of Attorney
- Functional Decline of Aging
- Goal Setting with Elderly Patients and Families
- Medication and Dosing Issues in the Elderly
- Natural and Clinical Impact of Physiologic Effects Associated with Aging
- Palliative and Hospice Care
- Preoperative Evaluation of Geriatric Patients

5. Immunology

- Components of the Immune System
- Immune Response to Injury and Infection
- Surgery and Surgical Conditions in Immuno-compromised Hosts
- Transplant Immunology

6. Infection and Antimicrobial Therapy

- Diagnosis and Management of Intra-abdominal Infections
- Healthcare-Acquired Infections
- Hepatitis - Viral (Occupational Risk)
- Host Defense and Infection
- Infection Control – Avoiding Risk to Self and Others
- Infections – Bacterial, Common
- Infections – Diagnostic Approach
- Infections – Fungal, Common
- Infections – Viral, Common
- Pathophysiology of Sepsis
- Perioperative Antimicrobial Prophylaxis
- Principles of Antimicrobial Resistance
- Sepsis/SIRS Syndrome

7. Minimally Invasive Surgery – Principles

- MIS Equipment and Troubleshooting
- Physiologic Changes Associated with Pneumoperitoneum
- Principles and Techniques of Abdominal Access
- Robotic Surgery – Principles

8. Nutrition and Metabolism

- Effect of Surgery, Illness, and Injury on Nutritional Requirements
- Nutrition, Enteral – Technique
- Nutrition, Parenteral – Technique
- Nutrition Requirements
- Nutritional Assessment, Indications, and Choice of Route for Nutritional Support
- Nutritional Pharmacology and Immunonutrition
- Nutritional Support – Long-Term

9. Oncology and Tumor Biology

- Chemotherapy - Principles
- Epidemiology
- Genetic Susceptibility
- Molecular Biology
- Radiation Therapy - Principles
- Screening and Biomarkers
- Tumor Immunology

10. Pharmacology

- Adverse Effects of Drugs Commonly Used in Surgical Patients
- Principles of Pharmacokinetics, Pharmacodynamics, and Monitoring of Drug Levels

11. Preoperative Evaluation and Perioperative Care

- Common Postoperative Problems
- Evaluation of Surgical Risk
- Perioperative Management of the Patient on Steroids
- Perioperative Management of the Therapeutically Anticoagulated Patient
- Preoperative Assessment and Management of Cardiac Risk
- Preoperative Assessment and Management of Coexisting Infection
- Preoperative Assessment and Management of Pulmonary Risk
- Prophylaxis for Venous Thromboembolism

12. Transfusion and Disorders of Coagulation

- Evaluation of Ongoing Bleeding and Laboratory Assessment of Coagulation
- Inherited and Acquired Disorders of Coagulation
- Normal Mechanisms of Hemostasis and Coagulation
- Transfusion – Indications, Risks, Type and Crossmatch, and Component Therapy

13. Wound Healing

- Disturbances of Wound Healing and Chronic Wounds
- Physiology of Normal Wound Healing
- Wound Care – Adjunctive
- Wound Care – Postoperative
- Wound Closure

1. Ethical Issues in Clinical Surgery: Competition of Interests

- Accepting Gifts from Vendors
- Clinical Research
- Confronting Problem Behavior
- Non-Patient Care Obligations
- Personal Investments
- Refusal to Care for Patients
- Reimbursement Incentives

2. Ethical Issues in Clinical Surgery: Truth Telling

- Dealing with Complications and Poor Outcomes
- Informed Consent
- Listening and the Surgeon-Patient Relationship
- Respecting Cultural Diversity and Individual Sensitivities
- Truth Telling and the Surgeon-Patient Relationship
- Use of the Internet and E-mail for Communication

3. Ethical Issues in Clinical Surgery: Confidentiality

- Concern for the Safety of Identifiable Others
- Conversations about Patients in Public
- Duty to Report Patients to Public Authorities
- Relaying Genetic Test Results to Family Members
- Revealing Confidential Information
- Surgeons Infected with Blood-Borne Diseases

4. Ethical Issues in Clinical Surgery: Professional Obligations

- Obligations to Other Professionals
- Obligations to Patients: Commitment
- Obligations to Patients: Competence
- Obligations to Society: Allocation of Resources
- Obligations to Society: Teaching and Learning Surgery

5. Ethical Issues in Clinical Surgery: End-of-Life Issues

- Advance Directives and the Surgical Patient
- DNR Orders in the Operating Room
- Euthanasia and Physician-assisted Suicide
- Futility
- Maintaining Contact
- Palliative Care
- Talking About Death
- Withdrawing and Withholding Treatment

6. Ethical Issues in Clinical Surgery: Substitute Decision Making

- By What Criteria Should Substitute Decision Makers Decide?
- Substitute Decision Makers and DNR Orders
- Substitute Decisions for Children
- Unclear Competence and Decision-Making Capacity
- Who Decides When the Patient Cannot?

INTERPERSONAL AND COMMUNICATION SKILLS

1. Non-Technical Skills for Surgeons

- Cognitive Skills (Situation Awareness and Decision Making)
- Social Skills (Communication, Teamwork and Leadership)

2. Surgical Professionalism and Interpersonal Communication Education (SPICE)

- Admitting Mistakes - Ethical Choices and Reasoning
- Advanced Communication Skills for Surgical Practice
- Cultural Diversity - Working Through the Barriers of Language and Differing Customs
- Delivering Bad News - Your Chance to Become a Master Surgeon
- Giving and Getting Feedback
- Managing Your Career - Making the Professional and Personal Choices that Will Define You
- Medical Errors and Apology
- Safe Handoff of Patient Care Duties
- The Stress of Surgical Practice - The Signs of Stress, Depression, and Suicide in You and Your Surgical Colleagues
- Working with Professionals Around You - Team Communication and Respect

PRACTICE-BASED LEARNING AND IMPROVEMENT

1. Quality Improvement

- Inspiring a Healthy Culture for Patient Care
- Local Engagement in Quality Improvement
- Problem-Based Quality Improvement
- Understanding the Data and Methods to Evaluate Performance

1. Economics and Cost Accounting

- Allocating Overhead
- Historical Background
- How Hospitals are Paid
- How Physicians are Paid
- The Throughput Imperative
- What It Costs to Deliver Care
- Who Pays for Health Care?

2. Financial Stewardship

- Applying Finance to Healthcare
- CT Scanner Case Study
- The Capital Budgeting Process
- Health Systems' Financial Underpinnings
- Introduction to Corporate Finance
- Practical Advice Capital Budgeting

3. Legal and Institutional Safeguards

- Applied Quality Assurance
- Conflict of Interest
- Health Care Compliance
- Medical Liability
- Quality Assurance

4. Operations Management

- Bottlenecks and Critical Pathways
- Introduction to Operations Management
- Little's Law
- Managing Variability

5. Physician Organization and Leadership

- Facing Cuts in Radiology Reimbursement
- Marketing Physician Practices
- The Medical Staff and Its By-Laws
- Negotiations and Physician Contracting
- Physician Group Practices
- Physician Leadership

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