



*Curriculum
Outline*

for

*General
Surgery*

2015–2016

SURGICAL COUNCIL ON
RESIDENT EDUCATION

www.surgicalcore.org



CURRICULUM
OUTLINE
FOR
GENERAL SURGERY

2015–2016

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Resident Education*

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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 currently listed for four of the six competencies of the Accreditation Council for Graduate Medical Education (ACGME): patient care; medical knowledge; interpersonal and communication skills; and systems-based practice. The patient care topics cover 28 organ system-based categories, with each category separated into Diseases/Conditions and Operations/Procedures. As of this edition, topics within these two areas are then designated as ***Core*** (formerly *Broad* or *Essential*) or ***Advanced*** (formerly *Focused* or *Complex*).

Additional changes from the previous edition are indicated in the Excel version of this outline, available at www.surgicalcore.org. Please note topics listed in this booklet may not directly match those currently on the SCORE Portal — this booklet 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

PATIENT CARE

CONTENTS

	Page
BY CATEGORY.....	11
1. Abdomen – General.....	11
2. Abdomen – Hernia.....	12
3. Abdomen – Biliary.....	13
4. Abdomen – Liver.....	14
5. Abdomen – Pancreas.....	15
6. Abdomen – Spleen.....	16
7. Alimentary Tract – Esophagus.....	17
8. Alimentary Tract – Stomach.....	18
9. Alimentary Tract – Small Intestine.....	19
10. Alimentary Tract – Large Intestine.....	20
11. Alimentary Tract – Anorectal.....	21
12. Endoscopy.....	22
13. Breast.....	23-24
14. Endocrine.....	25
15. Skin and Soft Tissue.....	26
16. Surgical Critical Care.....	27-28
17. Trauma.....	29-30
18. Vascular – Arterial Disease.....	31-32
19. Vascular – Venous.....	33
20. Vascular – Access.....	34
21. Transplantation.....	35
22. Thoracic Surgery.....	36
23. Pediatric Surgery.....	37-38
24. Plastic Surgery.....	39
25. Genitourinary.....	40
26. Gynecology.....	41
27. Head and Neck.....	42
28. Nervous System.....	43
DISEASES BY LEVEL.....	44
Core.....	44-47
Advanced.....	47-49
OPERATIONS BY LEVEL.....	50
Core.....	50-52
Advanced.....	52-54

MEDICAL KNOWLEDGE

CONTENTS

	Page
1. Anesthesia	55
2. Biostatistics and Evaluation of Evidence	55
3. Fluids, Electrolytes and Acid-Base Balance	55
4. Geriatric Surgery and End-of-Life Care	56
5. Immunology	56
6. Infection and Antimicrobial Therapy ...	56
7. Minimally Invasive Surgery - Principles	57
8. Nutrition and Metabolism.....	57
9. Oncology and Tumor Biology.....	57
10. Pharmacology	57
11. Preoperative Evaluation and Perioperative Care.....	58
12. Transfusion and Disorders of Coagulation.....	58
13. Wound Healing.....	58

**INTERPERSONAL AND
COMMUNICATION SKILLS
CONTENTS**

	Page
1. Competition of Interests	59
2. Truth Telling	59
3. Confidentiality	59
4. Professional Obligations	60
5. End-of-Life Issues	60
6. Substitute Decision Making	60
7. Non-Technical Skills for Surgeons	60
8. SPICE	61

SYSTEMS-BASED PRACTICE

CONTENTS

	Page
1. Economics and Cost Accounting.....	62
2. Financial Stewardship.....	62
3. Legal and Institutional Safeguards	62
4. Operations Management.....	62
5. Physician Organization and Leadership	63

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. An outline of topics for the medical knowledge competency was added with the 2010-2011 edition. This edition for 2015-2106 features the inclusion of two more competencies: interpersonal and communication skills and systems-based practice.

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 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, study questions and a variety of resource materials, including textbook chapters, videos and radiologic images. Multiple-choice questions are also available to assess resident knowledge. Additional features to facilitate online learning will be implemented this year, as well as new content. For more information, 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. With this edition, 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
- Intra-abdominal Abscess
- Rectus Sheath Hematoma

ADVANCED

- Abdominal Pain - Chronic
- Ascites - Chylous
- Bacterial Peritonitis - Spontaneous
- 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

ADVANCED

- Pseudomyxoma - Operation

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

- Abdominal Wall Reconstruction - Components Separation
- Inguinal and Femoral Hernia - Repair
- Miscellaneous Hernias - Repair
- Ventral Hernia - Repair

ADVANCED

- Diaphragmatic Hernia - Repair

3. Abdomen – Biliary

Diseases/Conditions

CORE

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

ADVANCED

- Ampullary Stenosis/Sphincter of Oddi Dysfunction
- Bile Duct Neoplasms
- Choledochal Cyst
- Gallbladder Cancer
- Primary Sclerosing Cholangitis

Operations/Procedures

CORE

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

ADVANCED

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

4. Abdomen – Liver

Diseases/Conditions

CORE

- Hepatic Abscess
- Hepatic Mass - Evaluation

ADVANCED

- Budd-Chiari Syndrome
- Cirrhosis/Portal Hypertension (Ascites)
- Esophageal Varices
- Hepatic Neoplasms - Benign
- Hepatic Neoplasms - Malignant
- Hepatic Neoplasms - Metastatic

Operations/Procedures

CORE

- Hepatic Abscess - Drainage
- Hepatic Biopsy

ADVANCED

- Hepatic Ultrasound - Intraoperative
- Portal-systemic Shunt
- Segmentectomy/Lobectomy - Laparoscopic
- Segmentectomy/Lobectomy - Open

5. Abdomen – Pancreas

Diseases/Conditions

CORE

- Pancreatic Pseudocyst
- Pancreatitis - Acute/Pancreatic Necrosis/Abscess

ADVANCED

- Intraductal Papillary Mucinous Neoplasms
- Pancreas Divisum
- Pancreatic Neoplasms - Cystic
- Pancreatic Neoplasms - Endocrine
- Pancreatic Neoplasms - Exocrine
- 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

- Postsplenectomy Sepsis

ADVANCED

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

Operations/Procedures

CORE

- Splenectomy
- Splenectomy/Splenorrhaphy - Partial

7. Alimentary Tract – Esophagus

Diseases/Conditions

CORE

- Achalasia
- Dysphagia
- Esophageal Diverticula
- Esophageal Perforation - Iatrogenic
- Esophageal Perforation - Spontaneous
- Gastroesophageal Reflux/Barrett's Esophagus
- Hiatal Hernias
- Mallory-Weiss Syndrome
- Stricture

ADVANCED

- Esophageal Caustic Ingestion and Foreign Bodies
- Esophageal Motility Disorders other than Achalasia
- Esophageal Neoplasms - Benign
- Esophageal Neoplasms - Malignant

Operations/Procedures

CORE

- Antireflux Procedures
- Cricopharyngeal Myotomy with Zenker's Diverticulum - Excision
- Esophageal Perforation - Repair/Resection
- Paraesophageal Hernia - Laparoscopic Repair
- Paraesophageal Hernia - Open Repair

ADVANCED

- Esophagectomy/Esophagogastrectomy
- Esophagomyotomy (Heller)

8. Alimentary Tract – Stomach

Diseases/Conditions

CORE

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

ADVANCED

- Gastric Bezoars and Foreign Bodies
- Gastroparesis
- Morbid Obesity
- Postgastrectomy Syndromes

Operations/Procedures

CORE

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

ADVANCED

- Morbid Obesity - Operation
- 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 Adenocarcinoma
- Small Intestinal Crohn's Disease - Surgical Management
- Small Intestinal Obstruction
- Small Intestinal Polyps

ADVANCED

- Enteric Infections/Blind Loop Syndrome
- Short Bowel Syndrome

Operations/Procedures

CORE

- Adhesiolysis
- Feeding Jejunostomy
- Ileostomy
- Ileostomy Closure
- Small Intestinal Resection
- Superior Mesenteric Artery Embolectomy/Thrombectomy

ADVANCED

- Strictureplasty for Crohn's Disease

10. Alimentary Tract – Large Intestine

Diseases/Conditions

CORE

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

ADVANCED

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

ADVANCED

- 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

ADVANCED

- Breast Cancer - Phyllodes Tumor
- 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 Cancer
- Adrenal Mass
- Hyperaldosteronism - Primary
- Hypercortisolism - Cushing Syndrome/Disease
- Hyperparathyroidism
- Hyperthyroidism
- Hypothyroidism - Postoperative
- Pheochromocytoma
- Thyroid Cancer
- Thyroid Nodule

ADVANCED

- Multiple Endocrine Neoplasias
- Parathyroid Cancer
- Thyroiditis

Operations/Procedures

CORE

- Parathyroidectomy
- Thyroidectomy - Partial or Total
- Ultrasound of the Thyroid

ADVANCED

- Adrenalectomy

15. Skin and Soft Tissue

Diseases/Conditions

CORE

- Adnexal Tumors of the Skin
- Cellulitis
- Felon/Paronychia
- Hidradenitis
- Melanoma and Nevi
- Necrotizing Soft Tissue Infections
- Non-Melanoma Skin Cancers
- 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
- 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 - Electrical and Chemical
- Burns - Flame and Scald
- 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

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17. Trauma (cont.)

Diseases/Conditions

ADVANCED (CONT.)

- 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

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
- 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

- Abdominal Aortic Aneurysm - Endovascular/
Open Repair
- Amputations - Lower Extremity
- Aortofemoral Bypass
- Embolectomy/Thrombectomy - Arterial
- Extra-anatomic Bypass
- Femoral-popliteal Bypass
- Infrapopliteal Bypass

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18. Vascular – Arterial Disease (cont.)

Operations/Procedures

ADVANCED

- Arterial Occlusive Disease - Endarterectomy
- Carotid Endarterectomy
- Endovascular - Therapeutic, Including Thrombolysis
- Femoral Aneurysm - Repair
- Graft-enteric Fistula - Management
- 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
- Venous Access Devices - Insertion

21. Transplantation

Diseases/Conditions

CORE

- Brain Death

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
- Gastrointestinal Bleeding - Lower
- Hypertrophic Pyloric Stenosis
- Inguinal Hernia
- Intussusception
- Malrotation
- Meckel's Diverticulum
- Tracheal/Esophageal Foreign Bodies
- Umbilical Hernia

ADVANCED

- 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

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

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
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
Cholangitis
Cholecystitis - Acalculous
Cholecystitis - Acute and Chronic
Choledocholithiasis
Gallbladder Polyps
Gallstone Ileus
Jaundice - Obstructive
Pancreatitis - Biliary

Abdomen - Liver

Hepatic Abscess
Hepatic Mass - Evaluation

Abdomen - Pancreas

Pancreatic Pseudocyst
Pancreatitis - Acute/Pancreatic Necrosis/Abscess

Abdomen - Spleen

Postsplenectomy Sepsis

Alimentary Tract - Esophagus

Achalasia
Dysphagia
Esophageal Diverticula
Esophageal Perforation - Iatrogenic
Esophageal Perforation - Spontaneous
Gastroesophageal Reflux/Barrett's Esophagus
Hiatal Hernias
Mallory-Weiss Syndrome
Stricture

Alimentary Tract - Stomach

Gastric Cancer
Gastrointestinal Bleeding - Upper
GIST and Miscellaneous Neoplasms
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 Adenocarcinoma
Small Intestinal Crohn's Disease - Surgical Management
Small Intestinal Obstruction
Small Intestinal Polyps

DISEASES/CONDITIONS - CORE (CONT.)

Alimentary Tract - Large Intestine

Appendiceal Neoplasms
Appendicitis
Clostridium Difficile-associated Diarrhea
Colitis - Ischemic
Colon Cancer
Colon Neoplasms - Miscellaneous
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 - Invasive
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

Endocrine

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

Skin and Soft Tissue

Adnexal Tumors of the Skin
Cellulitis
Felon/Paronychia
Hidradenitis

(continued next page)

DISEASES/CONDITIONS - CORE (CONT.)

Skin and Soft Tissue (cont.)

Melanoma and Nevi
Necrotizing Soft Tissue Infections
Non-Melanoma Skin Cancers
Pilonidal Cyst/Sinus
Soft Tissue Masses - Evaluation
Surgical Site Infection

Surgical Critical Care

Abdominal Compartment Syndrome
Anaphylaxis
ARDS and Respiratory Failure
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 - Electrical and Chemical
Burns - Flame and Scald
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

DISEASES/CONDITIONS - CORE (CONT.)

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

Transplantation

Brain Death

Thoracic Surgery

Pleural Effusion/Empyema
Pneumothorax

Pediatric Surgery

Abdominal Mass
Abdominal Pain - Acute
Gastrointestinal Bleeding - Lower
Hypertrophic Pyloric Stenosis
Inguinal Hernia
Intussusception
Malrotation
Meckel's Diverticulum
Tracheal/Esophageal Foreign Bodies
Umbilical Hernia

Plastic Surgery

Abdominal Wall Reconstruction

Genitourinary

Hydrocele

Gynecology

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

Abdominal Pain - Chronic
Ascites - Chylous
Bacterial Peritonitis - Spontaneous
Desmoids/Fibromatoses
Mesenteric Cyst
Peritoneal Neoplasms - Carcinomatosis
Peritoneal Neoplasms - Pseudomyxoma peritonei

Abdomen - Biliary

Ampullary Stenosis/Sphincter of Oddi Dysfunction
Bile Duct Neoplasms
Choledochal Cyst
Gallbladder Cancer
Primary Sclerosing Cholangitis

DISEASES/CONDITIONS - ADVANCED (CONT.)

Abdomen - Liver

Budd-Chiari Syndrome
Cirrhosis/Portal Hypertension (Ascites)
Esophageal Varices
Hepatic Neoplasms - Benign
Hepatic Neoplasms - Malignant
Hepatic Neoplasms - Metastatic

Abdomen - Pancreas

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

Abdomen - Spleen

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

Alimentary Tract - Esophagus

Esophageal Caustic Ingestion and Foreign Bodies
Esophageal Motility Disorders other than Achalasia
Esophageal Neoplasms - Benign
Esophageal Neoplasms - Malignant

Alimentary Tract - Stomach

Gastric Bezoars and Foreign Bodies
Gastroparesis
Morbid Obesity
Postgastrectomy Syndromes

Alimentary Tract - Small Intestine

Enteric Infections and Blind Loop Syndrome
Short Bowel Syndrome

Alimentary Tract - Large Intestine

Constipation - Functional
Irritable Bowel Syndrome
Polyposis Syndromes

Alimentary Tract - Anorectal

Anal Dysplasia/Sexually Transmitted Diseases
Fecal Incontinence
Rectal Prolapse

Breast

Phyllodes Tumor
Postmastectomy Reconstruction Options

Endocrine

Multiple Endocrine Neoplasias
Parathyroid Cancer
Thyroiditis

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

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

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

Abdominal Wall Reconstruction - Components Separation
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 - 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
Cricopharyngeal Myotomy with Zenker's Diverticulum - Excision
Esophageal Perforation - Repair/Resection
Paraesophageal Hernia - Laparoscopic Repair
Paraesophageal Hernia - Open Repair

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
Superior Mesenteric Artery Embolectomy/Thrombectomy

Alimentary Tract - Large Intestine

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

Alimentary Tract - Anorectal

Anal Cancer - Excision
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
Ultrasound of the Thyroid

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

Abdominal Aortic Aneurysm - Endovascular/Open Repair
Amputations - Lower Extremity
Aortofemoral Bypass
Embolectomy/Thrombectomy - Arterial
Extra-anatomic Bypass
Femoral-popliteal Bypass
Infrapopliteal Bypass

OPERATIONS/PROCEDURES - CORE (CONT.)

Vascular - Venous

Sclerotherapy - Peripheral Vein

Vena Caval Filter - Insertion

Venous Insufficiency/Varicose Veins - Operation

Vascular - Access

Arteriovenous Graft/Fistula

Percutaneous Vascular Access

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

Hysterectomy

Salpingo-oophorectomy

Head and Neck

Cricothyroidotomy

Lymph Node Biopsy

Tracheostomy

Nervous System

Nerve Block - Digital

Nerve Block - Intercostal

OPERATIONS/PROCEDURES - ADVANCED

Abdomen - General

Pseudomyxoma - Operation

Abdomen - Hernia

Diaphragmatic Hernia - Repair

Abdomen - Biliary

Bile Duct Cancer - Operation

Bile Duct Injury - Acute Repair

Bile Duct Neoplasms - Operation

Common Bile Duct Exploration - Laparoscopic

Gallbladder Cancer - Operation

Transduodenal Sphincteroplasty

Ultrasound of the Biliary Tree

Abdomen - Liver

Hepatic Ultrasound - Intraoperative

Portal-Systemic Shunt

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

Esophagectomy/Esophagogastrectomy
Esophagomyotomy (Heller)

Alimentary Tract - Stomach

Morbid Obesity - Operation
Postgastrectomy Syndromes - Revisional Procedures

Alimentary Tract - Small Intestine

Strictureplasty for Crohn's Disease

Alimentary Tract - Large Intestine

Coloproctectomy - Total (with Ileorectal Pull-Through)

Alimentary Tract - Anorectal

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

Skin and Soft Tissue

Iliioinguinal-Femoral Lymphadenectomy
Soft Tissue Sarcoma - Resection

Surgical Critical Care

Cardiac Pacing
Temporary Transvenous Pacemaker

Trauma

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

Vascular - Arterial Disease

Arterial Occlusive Disease - Endarterectomy
Carotid Endarterectomy
Endovascular - Therapeutic, Including Thrombolysis
Femoral Aneurysm - Repair
Graft-enteric Fistula - Management
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

OPERATIONS/PROCEDURES - ADVANCED (CONT.)

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

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

- 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
- Principles of Antimicrobial Resistance
- Sepsis/SIRS Syndrome
- Surgical Site Infections and Prophylaxis

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
- Nutritional Assessment, Indications, and Choice of Route for Nutritional Support
- Nutritional Pharmacology and Immunonutrition
- Nutritional Requirements
- Nutritional Support – Long-Term

9. Oncology and Tumor Biology

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

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?

7. Non-Technical Skills for Surgeons

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

8. 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
- Managing Your Career - Making the Professional and Personal Choices that will Define You
- 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

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 Case Study
- Marketing Physician Practices
- The Medical Staff and Its By-Laws
- Negotiations and Physician Contracting
- Physician Group Practices
- Physician Leadership

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