



**CURRICULUM
OUTLINE
FOR
GENERAL SURGERY**

2018–2019

**Surgical Council on
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 27 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

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?” In 2004, the American Board of Surgery began to develop a 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.

This outline should not be viewed as static. It will continue to 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. Changes from the previous edition are indicated in the Excel version of this outline, available at www.surgicalcore.org.

Modules on the portal contain learning objectives, discussion questions, and a variety of resource materials, including textbook chapters, videos and 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 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 27 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 and Chronic
- Rectus Sheath Hematoma

Advanced

- Ascites - Chylous
- Peritoneal Neoplasms

Operations/Procedures

Core

- Abdominal Exploration
- Intra-abdominal Abscess - Drainage
- Peritoneal Dialysis Catheter Insertion

2. Abdomen – Hernia

Diseases/Conditions

Core

- Inguinal and Femoral Hernias
- Miscellaneous Hernias
- Umbilical and Epigastric Hernias
- Ventral Hernia

Operations/Procedures

Core

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

3. Abdomen – Biliary

Diseases/Conditions

Core

- Benign Biliary Obstruction
- Bile Duct Injury - Iatrogenic
- Biliary Neoplasms
- Cholecystitis
- Choledochal Cyst

Advanced

- Functional Biliary Disorders
- Primary Sclerosing Cholangitis

Operations/Procedures

Core

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

Advanced

- Bile Duct Cancer - Operation
- Bile Duct Injury, Iatrogenic - Acute Repair
- Bile Duct Neoplasms - Operation
- Gallbladder Cancer - Operation
- Ultrasound of the Biliary Tree

4. Abdomen – Liver

Diseases/Conditions

Core

- Hepatic Abscess
- Hepatic Neoplasms – Metastatic
- Primary Hepatic Neoplasms – Benign and Malignant

Advanced

- Cirrhosis/Portal Hypertension (Ascites)

Operations/Procedures

Core

- Hepatic Abscess - Drainage
- Hepatic Biopsy

Advanced

- Hepatic Ultrasound - Intraoperative
- Segmentectomy/Lobectomy

5. Abdomen – Pancreas

Diseases/Conditions

Core

- Cystic Lesions of the Pancreas
- Pancreatic Neoplasms - Endocrine
- Pancreatic Neoplasms - Exocrine
- Pancreatitis - Acute/Pancreatic Necrosis/Abscess

Advanced

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

Operations/Procedures

Core

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

Advanced

- Ampullary Resection for Tumor
- Pancreatectomy - Total
- Pancreatic Ultrasound - Intraoperative
- Pancreaticoduodenectomy
- Pancreatitis, Chronic – Operative Management

6. Abdomen – Spleen

Diseases/Conditions

Advanced

- Hematologic Diseases of the Spleen
- Splenic Abscess, Cysts, and Neoplasms

Operations/Procedures

Core

- Splenectomy

7. Alimentary Tract – Esophagus

Diseases/Conditions

Core

- Esophageal Motility Disorders
- Esophageal Neoplasms – Benign and Malignant
- Esophageal Perforation
- Gastroesophageal Reflux/Barrett's Esophagus
- Hiatal Hernias

Advanced

- Esophageal Caustic Ingestion and Foreign Bodies

Operations/Procedures

Core

- Antireflux Procedures

Advanced

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

8. Alimentary Tract – Stomach

Diseases/Conditions

Core

- Gastric Adenocarcinoma
- Gastric Foreign Bodies
- Gastrointestinal Bleeding - Upper
- GIST and Miscellaneous Neoplasms
- Morbid Obesity
- Peptic Ulcer Disease
- Stress Gastritis

Advanced

- Functional Disorders of the Stomach

Operations/Procedures

Core

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

Advanced

- Morbid Obesity - Operations
- Postgastrectomy Syndromes - Revisional Procedures

9. Alimentary Tract – Small Intestine

Diseases/Conditions

Core

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

Advanced

- Enteric Infections/Blind Loop Syndrome
- Short Bowel Syndrome

Operations/Procedures

Core

- Adhesiolysis
- Ileostomy and Ileostomy Closure
- Small Intestinal Resection

10. Alimentary Tract – Large Intestine

Diseases/Conditions

Core

- Appendicitis
- *C. difficile* Colitis
- Colitis - Ischemic
- Colon Cancer
- Colonic Polyps
- Colonic Volvulus and Obstruction
- Diverticulitis
- Gastrointestinal Bleeding - Lower
- Ulcerative Colitis - Surgical Management

Advanced

- Functional Disorders of the Intestine
- Polyposis Syndromes

Operations/Procedures

Core

- Appendectomy
- Colectomy - Partial
- Colectomy - Total and Subtotal
- Colostomy and Colostomy Closure

11. Alimentary Tract – Anorectal

Diseases/Conditions

Core

- Anal Cancer
- Anal Dysplasia and STDs
- Anal Fissure
- Anorectal Abscess and Fistulae
- Hemorrhoids
- Rectal Cancer

Advanced

- Fecal Incontinence
- Rectal Prolapse

Operations/Procedures

Core

- Anal Sphincterotomy - Internal
- Anorectal Abscess - Drainage
- Anorectal Fistula - Repair
- Hemorrhoids - Management
- Perianal Condylomas - Excision

Advanced

- Anal Cancer - Excision
- Rectal Cancer - Abdominoperineal Resection and Pelvic Exenteration
- Rectal Cancer - Transanal Resection
- Rectal Prolapse - Repair

12. Endoscopy

Diseases/Conditions

Advanced

- Aerodigestive Tract Foreign Bodies

Operations/Procedures

Core

- Bronchoalveolar Lavage and Bronchoscopy
- Colonoscopy
- Esophagogastroduodenoscopy
- Lower GI Endoscopy

13. Breast

Diseases/Conditions

Core

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

Advanced

- Postmastectomy Reconstruction Options

Operations/Procedures

Core

- Axillary Sentinel Lymph Node Biopsy and Lymphadenectomy
- Duct Excision
- Excisional Breast Biopsy and Partial Mastectomy
- Mastectomy - Simple, Modified Radical, and Radical
- Percutaneous Breast Biopsy and Cyst Aspiration

14. Endocrine

Diseases/Conditions

Core

- Adrenal Mass - Incidental
- 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

- Cellulitis
- Hidradenitis
- Melanoma and Nevi
- Necrotizing Soft Tissue Infections
- Non-Melanoma Skin Cancers
- Paronychia and Felon
- Pilonidal Cyst/Sinus
- Soft Tissue Masses - Evaluation

Advanced

- Decubitus Ulcer
- Desmoids/Fibromatoses
- 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
- Acute Respiratory Distress Syndrome (ARDS)
- Brain Death
- Cardiac Arrest
- Cardiac Arrhythmias - Common
- Cardiac Failure and Cardiogenic Shock
- Derangements of Electrolytes and Acid-Base Balance
- Endocrine Dysfunction
- Hepatic Failure and Hepatorenal Syndrome
- Hypovolemic Shock
- Hypoxemic Syndromes (PE, Pneumonia)
- Neurogenic Shock
- Neurologic Dysfunction
- Postoperative Delirium
- Renal Failure
- Respiratory Failure
- Sepsis and Septic Shock

Advanced

- Organ Donors and Selection Criteria

Operations/Procedures

Core

- Intubation and Difficult Airway
- Nutritional Support
- Ultrasound Use for Intravascular Access
- Vascular Access

Advanced

- Noninvasive and Invasive Cardiac Pacing

17. Trauma

Diseases/Conditions

Core

- Burns
- Chest Wall, Pleural and Diaphragm Injuries
- Cardiac Injury
- Colon and Rectal Injury
- Duodenal and Pancreatic Injury
- Esophageal Injury
- Frostbite and Hypothermia
- Gastric and Small Intestinal Injury
- Geriatric Trauma
- Hepatic Injury
- Initial Assessment and Management of Trauma
- Lower Urinary Tract Injuries
- Pediatric Trauma
- Pelvic Fractures and Retroperitoneal Hematoma
- Splenic Injury
- Tracheobronchial and Lung Injury
- Trauma in Pregnancy
- Upper Aerodigestive Tract Injury
- Upper Urinary Tract Injuries
- Vascular Injury - Abdomen
- Vascular Injury - Extremities
- Vascular Injury - Neck
- Vascular Injury - Thorax

Advanced

- Bite and Envenomation Injuries
- Brachial Plexus Injury
- Extremity Injuries
- Head Injury - Penetrating and Closed
- Smoke Inhalation Injury and Carbon Monoxide Poisoning
- Spine Fracture

17. Trauma (cont.)

Operations/Procedures

Core

- Abdominal Exploration for Trauma
- Cardiac Injury - Repair
- Duodenal and Pancreatic Injury - Operations
- Esophageal Injury - Repair
- Exploratory Laparoscopy
- Exploratory Laparotomy
- Focused Assessment with Sonography for Trauma (FAST)
- Gastrointestinal Tract Injury - Repair
- Hepatic Injury - Packing and Repair/Resection
- Lower Extremity Fasciotomy
- Neck Exploration for Injury
- Splenectomy/Splenorrhaphy
- Urinary Tract Injuries - Operations
- Vascular Injuries - Operations
- Wounds, Major - Debride/Suture

Advanced

- Tendon - Repair
- Thermal Injuries - Operations

18. Vascular – Arterial Disease

Diseases/Conditions

Core

- Acute Thrombosis and Ischemia
- Cerebrovascular Disease
- Compartment Syndromes
- Diabetic Foot Infections
- Peripheral Arterial Emboli
- Peripheral Vascular Occlusive Disease

Advanced

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

Operations/Procedures

Core

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

Advanced

- Abdominal and Aortoiliac Aneurysm - Repair
- Aortoiliac Reconstruction for Occlusive Disease
- Carotid Endarterectomy
- Endovascular Intervention Principles
- Extra-anatomic Bypass
- Mesenteric Occlusive Disease - Operation
- Peripheral Aneurysms - Repair
- Superior Mesenteric Artery Embolectomy/
Thrombectomy
- Ultrasound in the Diagnosis and Management of
Vascular Diseases

19. Vascular – Venous

Diseases/Conditions

Core

- Evaluation of the Swollen Leg
- Thrombophlebitis
- Varicose Veins
- Venous Stasis/Chronic Venous Insufficiency
- Venous Thromboembolism

Operations/Procedures

Core

- Vena Caval Filter - Insertion
- Venous Insufficiency/Varicose Veins - Operation

20. Vascular – Access

Diseases/Conditions

Core

- Vascular Access for Dialysis

Operations/Procedures

Core

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

21. Transplantation

Diseases/Conditions

Advanced

- Organ Preservation

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 and Pleurodesis

Advanced

- Chylothorax
- Mediastinal Tumors and Cysts
- Mediastinitis
- Malignant Tumors of the Lung: Primary and Metastatic
- Superior Vena Cava Syndrome

Operations/Procedures

Core

- Exploratory Thoracotomy - Open and Thoracoscopic
- Partial Pulmonary Resections - Open and Thoracoscopic
- Tube Thoracostomy and Thoracentesis

23. Pediatric Surgery

Diseases/Conditions

Core

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

Advanced

- Biliary Atresia
- Choledochal Cysts
- Congenital Aganglionosis (Hirschsprung Disease)
- Congenital Diaphragmatic Hernia
- Cryptorchidism
- Esophageal Atresia/Tracheoesophageal Fistula
- Gastroschisis/Omphalocele
- Imperforate Anus
- Necrotizing Enterocolitis
- Neonatal Small Bowel Obstruction

Operations/Procedures

Core

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

23. Pediatric Surgery (cont.)

Advanced

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

24. Plastic Surgery

Operations/Procedures

Core

- Complex Wound Closure
- Skin Grafting

25. Genitourinary

Diseases/Conditions

Core

- Hydrocele
- Scrotal Pain and Masses

Advanced

- Acute Urinary Retention
- Genitourinary Neoplasms

Operations/Procedures

Core

- Cystostomy
- Nephrectomy

26. Gynecology and Obstetrics

Diseases/Conditions

Core

- Ectopic Pregnancy
- Pelvic Inflammatory Disease

Advanced

- Gynecologic Neoplasms

Operations/Procedures

Core

- Hysterectomy and Salpingo-oophorectomy
- Surgical Considerations in the Pregnant Patient

Advanced

- Cesarean Section

27. Head and Neck

Diseases/Conditions

Core

- Neck Mass - Evaluation
- Upper Airway Obstruction

Advanced

- Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer

Operations/Procedures

Core

- Lymph Node Biopsy
- Tracheostomy

Advanced

- Modified Neck Dissection
- Parotidectomy

DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions - CORE

Abdomen - General

Abdominal Pain - Acute and Chronic
Rectus Sheath Hematoma

Abdomen - Hernia

Inguinal and Femoral Hernias
Miscellaneous Hernias
Umbilical and Epigastric Hernias
Ventral Hernia

Abdomen - Biliary

Bile Duct Injury - Iatrogenic
Benign Biliary Obstruction
Biliary Neoplasms
Cholecystitis
Choledochal Cyst

Abdomen - Liver

Hepatic Abscess
Hepatic Neoplasms - Metastatic
Primary Hepatic Neoplasms - Benign and Malignant

Abdomen - Pancreas

Cystic Lesions of the Pancreas
Pancreatic Neoplasms - Endocrine
Pancreatic Neoplasms - Exocrine
Pancreatitis - Acute/Pancreatic Necrosis/Abscess

Alimentary Tract - Esophagus

Esophageal Motility Disorders
Esophageal Neoplasms - Benign and Malignant
Esophageal Perforation
Gastroesophageal Reflux/Barrett's
Esophagus Hiatal Hernias

Alimentary Tract - Stomach

Gastric Adenocarcinoma
Gastric Foreign Bodies
Gastrointestinal Bleeding - Upper
GIST and Miscellaneous Neoplasms
Morbid Obesity
Peptic Ulcer Disease
Stress Gastritis

Alimentary Tract - Small Intestine

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

Alimentary Tract - Large Intestine

Appendicitis
C. difficile Colitis
Colitis - Ischemic
Colon Cancer
Colonic Polyps
Colonic Volvulus and Obstruction
Diverticulitis
Gastrointestinal Bleeding - Lower
Ulcerative Colitis - Surgical Management

Diseases/Conditions - CORE (Cont.)

Alimentary Tract – Anorectal

Anal Cancer
Anal Dysplasia and STDs
Anal Fissure
Anorectal Abscess and Fistulae
Hemorrhoids
Rectal Cancer

Breast

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

Endocrine

Adrenal Mass - Incidental
Hyperaldosteronism - Primary
Hypocortisolism - Cushing Syndrome/Disease
Hyperparathyroidism
Hyperthyroidism
Hypothyroidism - Postoperative
Pheochromocytoma
Thyroid Cancer
Thyroid Nodule
Thyroiditis

Skin and Soft Tissue

Cellulitis
Hidradenitis
Melanoma and Nevi
Necrotizing Soft Tissue Infections
Non-Melanoma Skin Cancers
Paronychia and Felon
Pilonidal Cyst/Sinus
Soft Tissue Masses - Evaluation

Surgical Critical Care

Abdominal Compartment Syndrome
Anaphylaxis
Acute Respiratory Distress Syndrome (ARDS)
Brain Death
Cardiac Arrest
Cardiac Arrhythmias - Common
Cardiac Failure and Cardiogenic Shock
Derangements of Electrolytes and Acid Base Balance
Endocrine Dysfunction
Hepatic Failure and Hepatorenal Syndrome
Hypovolemic Shock
Hypoxemic Syndromes (PE, Pneumonia)
Neurogenic Shock
(continued next page)

Surgical Critical Care (cont.)

Neurologic Dysfunction
Postoperative Delirium
Renal Failure
Respiratory Failure
Sepsis and Septic Shock

Trauma

Burns
Chest Wall, Pleural and Diaphragm Injuries
Cardiac Injury
Colon and Rectal Injury
Duodenal and Pancreatic Injury
Esophageal Injury
Frostbite and Hypothermia
Gastric and Small Intestinal Injury
Geriatric Trauma
Hepatic Injury
Initial Assessment and Management of Trauma
Lower Urinary Tract Injuries
Pediatric Trauma
Pelvic Fractures and Retroperitoneal Hematoma
Splenic Injury
Tracheobronchial and Lung Injury
Trauma in Pregnancy
Upper Aerodigestive Tract Injury
Upper Urinary Tract Injuries
Vascular Injury - Abdomen
Vascular Injury - Extremities
Vascular Injury - Neck
Vascular Injury - Thorax

Vascular - Arterial Disease

Acute Thrombosis and Ischemia
Cerebrovascular Disease
Compartment Syndromes
Diabetic Foot Infections
Peripheral Arterial Emboli
Peripheral Vascular Occlusive Disease

Vascular - Venous

Evaluation of the Swollen Leg
Thrombophlebitis
Varicose Veins
Venous Stasis/Chronic Venous Insufficiency
Venous Thromboembolism

Vascular - Access

Vascular Access for Dialysis

Thoracic Surgery

Pleural Effusion/Empyema
Pneumothorax and Pleurodesis

Pediatric Surgery

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

Diseases/Conditions - CORE (Cont.)

Genitourinary

Hydrocele

Scrotal Pain and Masses

Gynecology and Obstetrics

Ectopic Pregnancy

Pelvic Inflammatory Disease

Head and Neck

Neck Mass - Evaluation

Upper Airway Obstruction

Diseases/Conditions - ADVANCED

Abdomen - General

Peritoneal Neoplasms

Abdomen - Biliary

Functional Biliary Disorders

Primary Sclerosing Cholangitis

Abdomen - Liver

Cirrhosis/Portal Hypertension (Ascites)

Abdomen - Pancreas

Intraductal Papillary Mucinous Neoplasms

Pancreas Divisum

Pancreatitis - Chronic (Including Hereditary
Pancreatitis)/Pancreatic Insufficiency

Abdomen - Spleen

Hematologic Diseases of the Spleen

Splenic Abscess, Cysts and Neoplasms

Alimentary Tract - Esophagus

Esophageal Caustic Ingestion and Foreign Bodies

Alimentary Tract - Stomach

Functional Disorders of the Stomach

Alimentary Tract - Small Intestine

Enteric Infections/Blind Loop Syndrome

Short Bowel Syndrome

Alimentary Tract - Large Intestine

Functional Disorders of the Intestine

Polyposis Syndromes

Alimentary Tract - Anorectal

Fecal Incontinence

Rectal Prolapse

Endoscopy

Aerodigestive Tract Foreign Bodies

Breast

Postmastectomy Reconstruction Options

Endocrine

Adrenal Cancer

Multiple Endocrine Neoplasias

Parathyroid Cancer

Skin and Soft Tissue

Decubitus Ulcer

Desmoids/Fibromatoses

Lymphedema/Lymphangitis

Soft Tissue Sarcomas

Surgical Critical Care

Organ Donors and Selection Criteria

Trauma

Bite and Envenomation Injuries

Brachial Plexus Injury

Extremity Injuries

Head Injury - Penetrating and Closed

Smoke Inhalation Injury and Carbon Monoxide Poisoning

Spine Fracture

Vascular - Arterial Disease

Aortic Dissection

Arterial Aneurysms - Aortic

Arterial Aneurysms - Peripheral

Arterial Aneurysms - Visceral

Nonatherosclerotic Occlusive Diseases

Renal Artery Disease

(continued next page)

Diseases/Conditions - ADVANCED (Cont.)

Vascular - Arterial Disease (cont.)

Thoracic Outlet Syndrome

Vascular Graft Infections

Transplantation

Organ Preservation

Thoracic Surgery

Chylothorax

Mediastinal Tumors and Cysts

Mediastinitis

Malignant Tumors of the Lung: Primary and Metastatic

Superior Vena Cava Syndrome

Pediatric Surgery

Biliary Atresia

Choledochal Cysts

Congenital Aganglionsis (Hirschsprung Disease)

Congenital Diaphragmatic Hernia

Cryptorchidism

Neonatal Small Bowel Obstruction

Esophageal Atresia/Tracheoesophageal Fistula

Gastroschisis/Omphalocele

Imperforate Anus

Necrotizing Enterocolitis

Genitourinary

Acute Urinary Retention

Genitourinary Neoplasms

Gynecology and Obstetrics

Gynecologic Neoplasms

Head and Neck

Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer

OPERATIONS/PROCEDURES BY LEVEL

Operations/Procedures - CORE

Abdomen - General

Abdominal Exploration
Intra-abdominal Abscess - Drainage
Peritoneal Dialysis Catheter Insertion

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
Common Bile Duct Exploration and Choledochoscopy

Abdomen - Liver

Hepatic Abscess - Drainage
Hepatic Biopsy

Abdomen - Pancreas

Pancreatectomy - Distal
Pancreatic Debridement
Pancreatic Pseudocyst - Drainage

Abdomen - Spleen

Splenectomy

Alimentary Tract - Esophagus

Antireflux Procedures

Alimentary Tract - Stomach

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

Alimentary Tract - Small Intestine

Adhesiolysis
Ileostomy and Ileostomy Closure
Small Intestinal Resection

Alimentary Tract - Large Intestine

Appendectomy
Colectomy - Partial
Colectomy - Total and Subtotal
Colostomy and Colostomy
Closure

Alimentary Tract - Anorectal

Anal Sphincterotomy - Internal
Anorectal Abscess - Drainage
Anorectal Fistula - Repair
Hemorrhoids - Management
Perianal Condylomas - Excision

Endoscopy

Bronchoalveolar Lavage and Bronchoscopy
Esophagogastroduodenoscopy
Lower GI Endoscopy

Breast

Axillary Sentinel Lymph Node Biopsy and
Lymphadenectomy
Duct Excision
Excisional Breast Biopsy and Partial Mastectomy
Mastectomy - Simple, Modified Radical, and Radical
Percutaneous Breast Biopsy and Cyst Aspiration

Operations/Procedures - CORE (Cont.)

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

Intubation and Difficult Airway
Nutritional Support
Ultrasound Use for Intravascular Access
Vascular Access

Trauma

Abdominal Exploration for Trauma
Cardiac Injury - Repair
Duodenal and Pancreatic Injury - Operations
Esophageal Injury - Repair
Focused Assessment with Sonography for Trauma (FAST)
Gastrointestinal Tract Injury - Repair
Hepatic Injury - Packing and Repair/Resection
Lower Extremity Fasciotomy
Neck Exploration for Injury
Splenectomy/Splenorrhaphy
Urinary Tract Injuries - Operations
Vascular Injuries - Operations
Wounds, Major - Debride/Suture

Vascular - Arterial Disease

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

Vascular - Venous

Vena Caval Filter - Insertion
Venous Insufficiency/Varicose Veins - Operation

Vascular - Access

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

Thoracic Surgery

Exploratory Thoracotomy - Open and Thoracoscopic
Partial Pulmonary Resections - Open and Thoracoscopic
Tube Thoracostomy and Thoracentesis

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
Nephrectomy

Operations/Procedures - CORE (Cont.)

Gynecology and Obstetrics

Hysterectomy and Salpingo-oophorectomy

Surgical Considerations in the Pregnant Patient

Head and Neck

Lymph Node

Biopsy

Tracheostomy

Operations/Procedures - ADVANCED

Abdomen - Biliary

Bile Duct Cancer - Operation
Bile Duct Injury, Iatrogenic - Acute Repair
Bile Duct Neoplasms - Operation
Gallbladder Cancer - Operation
Ultrasound of the Biliary Tree

Abdomen - Liver

Hepatic Ultrasound - Intraoperative
Segmentectomy/Lobectomy

Abdomen - Pancreas

Ampullary Resection for Tumor
Pancreatectomy - Total
Pancreatic Ultrasound - Intraoperative
Pancreaticoduodenectomy
Pancreatitis, Chronic - Operative Management

Alimentary Tract - Esophagus

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

Alimentary Tract - Stomach

Morbid Obesity - Operations
Postgastrectomy Syndromes - Revisional Procedures

Alimentary Tract - Small Intestine

Stricturoplasty for Crohn's Disease

Alimentary Tract - Large Intestine

Coloproctectomy - Total (with Ileorectal Pull-Through)

Alimentary Tract - Anorectal

Anal Cancer - Excision
Rectal Cancer - Abdominoperineal Resection and Pelvic
Exenteration
Rectal Cancer - Transanal Resection
Rectal Prolapse - Repair

Endocrine

Adrenalectomy Ultrasound of the Thyroid

Skin and Soft Tissue

Iliioinguinal-Femoral Lymphadenectomy
Soft Tissue Sarcoma - Resection

Surgical Critical Care

Noninvasive and Invasive Cardiac Pacing

Trauma

Tendon - Repair
Thermal Injuries - Operations

Vascular - Arterial Disease

Abdominal and Aortoiliac Aneurysm - Repair
Aortoiliac Reconstruction for Occlusive Disease
Carotid Endarterectomy
Endovascular Intervention Principles
Extra-anatomic Bypass
Graft-enteric Fistula - Management
Mesenteric Occlusive Disease - Operation
Peripheral Aneurysms - Repair
Superior Mesenteric Artery Embolectomy/Thrombectomy
Ultrasound in the Diagnosis and Management of Vascular
Diseases

Operations/Procedures - ADVANCED (Cont.)

Transplantation

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

Pediatric Surgery

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

Gynecology and Obstetrics

Cesarean Section

Head and Neck

Modified Neck Dissection

MEDICAL KNOWLEDGE

1. Anesthesia

- Anesthesia, General - Agents and Techniques
- Anesthesia, Regional and Local - Agents and Techniques
- Best Practices in Prescribing Opioids
- Choice of Anesthesia
- Conscious Sedation - Agents and Techniques
- Intraoperative Monitoring and Common Intraoperative Problems
- Nerve Blocks - Digital and Peripheral
- Pain, Acute - Management
- Pain, Chronic - 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

- Hypocalcemia and Hypercalcemia
- Hypokalemia and Hyperkalemia
- Hyponatremia and Hypernatremia
- Magnesium and Phosphorous Disorders

4. Geriatric Surgery and End-of-Life Care

- Advance Directives, DNR Orders, and Power of Attorney
- Frailty
- Goal Setting with Elderly Patients and Families
- Palliative and Hospice Care
- Perioperative Management 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

- Antimicrobial Stewardship
- Diagnostic Approach to Infection
- Infections - Hospital-Acquired
- Infections - Opportunistic
- Intra-abdominal Abscess
- Intra-abdominal Infections
- Prevention and Treatment of Surgical Site Infection
- Preoperative Assessment and Management of Coexisting Infection

7. Minimally Invasive Surgery – Principles

- Minimally Invasive Surgery (MIS) Principles
- Robotic Surgery - Principles
- Safe Use of Surgical Energy

8. Nutrition and Metabolism

- Effect of Surgery, Illness and Injury on Nutritional Requirements
- Nutritional Assessment
- Nutritional Pharmacology and Immunonutrition
- Nutritional Requirements

9. Oncology and Tumor Biology

- Adjunctive Therapy for Cancer
- Genetic Susceptibility
- Screening and Biomarkers
- Tumor Immunology

10. Preoperative Evaluation and Perioperative Care

- Common Postoperative Problems
- Evaluation of Surgical Risk
- Management of Perioperative Risk
- Postoperative Pain Management
- Prophylaxis of Venous Thromboembolism
- Ventilatory Support/Management

11. 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

12. Wound Healing

- Wound Closure and Postoperative Care
- Wound Healing

PROFESSIONALISM

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 (NOTSS)

- 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

SYSTEMS-BASED PRACTICE

1. Systems-Based Practice

- Advocating for Quality Patient Care
- Coordinating Patient Care
- Cost Awareness and Risk-Benefit Analysis
- Identifying Systems Errors - Root Cause Analysis
- Working Effectively in Various Healthcare Delivery Settings and Systems
- Working in Interprofessional Teams