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CURRICULUM OUTLINE FOR GENERAL SURGERY

SCORE®

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

- Desmoids/Fibromatoses
- Peritoneal Neoplasms

Operations/Procedures

Core

- Abdominal Exploration
- 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
- Functional Biliary Disorders

Advanced

- Primary Sclerosing Cholangitis

Operations/Procedures

Core

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

Advanced

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

4. Abdomen - Liver

Diseases/Conditions

Core

- Cirrhosis/Portal Hypertension (Ascites)
- Hepatic Abscess
- Hepatic Neoplasms – Metastatic
- Primary Hepatic Neoplasms – Benign and Malignant

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

Core

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

Advanced

Operations/Procedures

- Splenectomy

Core

7. Alimentary Tract - Esophagus

Diseases/Conditions

Core

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

Advanced

- Esophageal Caustic Ingestion and Foreign Bodies

Operations/Procedures

Core

- Antireflux Procedures

Advanced

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

8. Alimentary Tract - Stomach

Diseases/Conditions

Core

- Functional Disorders of the Stomach
- Gastric Adenocarcinoma
- Gastric Foreign Bodies
- Gastrointestinal Bleeding – Upper
- GISTs and Miscellaneous Neoplasms
- Morbid Obesity
- Peptic Ulcer Disease
- Stress Gastritis

Operations/Procedures

Core

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

Advanced

- Morbid Obesity – Operation
- Postgastrectomy Syndromes – Revisional Procedures

9. Alimentary Tract - Small Intestine

Diseases/Conditions

Core

- Enterocutaneous Fistula
- Meckel Diverticulum
- Mesenteric Ischemia – Acute (Arterial, Venous, and Nonocclusive)
- Paralytic Ileus
- Radiation Enteritis
- Small Intestinal Neoplasms
- Small Intestinal Obstruction

Advanced

- Enteric Infections/Blind Loop Syndrome
- Short Bowel Syndrome

Operations/Procedures

Core

- Adhesiolysis
- Crohn Disease – Surgical Management
- 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

Advanced

- Functional Disorders of the Intestine
- Polyposis Syndromes

Operations/Procedures

Core

- Appendectomy
- Colectomy – Partial
- Colectomy – Total and Subtotal
- Colostomy and Colostomy Closure
- Ulcerative Colitis – Surgical Management

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
- 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

Operations/Procedures

Core

- Bronchoscopy and Bronchoalveolar Lavage
- 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 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
- Nonmelanoma Skin Cancers
- Paronychia and Felon
- Pilonidal Cyst/Sinus
- Pressure Ulcer
- Soft Tissue Masses – Evaluation
- Soft Tissue Sarcomas

Advanced

- Lymphedema/Lymphangitis

Operations/Procedures

Core

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

Advanced

- Ilioinguinal-Femoral Lymphadenectomy
- Soft Tissue Sarcoma – Resection

16. Surgical Critical Care

Diseases/Conditions

Core

- Abdominal Compartment Syndrome
- Acute Respiratory Distress Syndrome (ARDS)
- Anaphylaxis
- 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 (Pulmonary Embolism, Pneumonia)
- Neurogenic Shock
- Neurologic Dysfunction
- Pain, Agitation, and 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
- Cardiac Injury
- Chest Wall, Pleural and Diaphragm Injuries
- 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
- Smoke Inhalation Injury and Carbon Monoxide Poisoning
- Splenic Injury
- Tracheobronchial and Lung Injury
- Trauma in Pregnancy
- Traumatic Brain Injury
- 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
- Spinal Cord Injury

17. Trauma (cont.)

Operations/Procedures

Core

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

Advanced

- Cardiac Injury – Repair
- Hand Tendon Repairs
- 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

- Acute Aortic Dissection
- 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

Advanced

- Abdominal and Aortoiliac Aneurysm – Repair
- Aortoiliac Reconstruction for Occlusive Disease
- Carotid Endarterectomy
- Endovascular Intervention Principles
- Extra-anatomic Bypass
- Graft-enteric Fistula – Management
- Lower Extremity 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

Advanced

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

20. Vascular - Access

Diseases/Conditions

Core

- Vascular Access for Dialysis

Operations/Procedures

Core

- Vascular Exposure – Principles
- Venous Access Devices – Insertion

Advanced

- Arteriovenous Graft/Fistula

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

- Chylothorax
- Pleural Effusion/Emphyema
- Pneumothorax and Pleurodesis

Advanced

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

Operations/Procedures

Core

- Exploratory Thoracotomy – Open and Thoracoscopic Tube
- Thoracostomy and Thoracentesis

Advanced

- Partial Pulmonary Resections – Open and Thoracoscopic

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

- Aerodigestive Tract Foreign Bodies
- Anorectal Malformations
- Biliary Atresia
- Choledochal Cysts
- Congenital Aganglionosis (Hirschsprung Disease)
- Congenital Diaphragmatic Hernia
- Cryptorchidism
- Esophageal Atresia/Tracheoesophageal Fistula
- Gastroschisis/Omphalocele
- 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.)

Diseases/Conditions

Advanced

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

24. Plastic Surgery

Operations/Procedures

Core

- Complex Wound Closure
- Skin Grafting

25. Genitourinary

Diseases/Conditions

Core

- Acute Urinary Retention
- Hydrocele
- Scrotal Pain and Masses

Advanced

- Genitourinary Neoplasms

Operations/Procedures

Core

- Cystostomy

Advanced

- Nephrectomy

26. Gynecology and Obstetrics

Diseases/Conditions

Core

- Ectopic Pregnancy
- Pelvic Inflammatory Disease

Advanced

- Gynecologic Neoplasms

Operations/Procedures

Core

- Surgical Considerations of the Pregnant Patient

Advanced

- Cesarean Section
- Hysterectomy and Salpingo-oophorectomy

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

Benign Biliary Obstruction
Bile Duct Injury – Iatrogenic
Biliary Neoplasms
Cholecystitis
Choledochal Cyst
Functional Biliary Disorders

Abdomen – Liver

Cirrhosis/Portal Hypertension (Ascites)
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 Esophagus
Hiatal Hernias

Alimentary Tract – Stomach

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

Alimentary Tract – Small Intestine

Enterocutaneous Fistula
Meckel Diverticulum
Mesenteric Ischemia – Acute (Arterial, Venous, and Nonocclusive)
Paralytic Ileus
Radiation Enteritis
Small Intestinal Neoplasms
Small Intestinal Obstruction

DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

Alimentary Tract – Large Intestine

Appendicitis
C. difficile Colitis
 Colitis – Ischemic
 Colon Cancer
 Colonic Polyps
 Colonic Volvulus and Obstruction
 Diverticulitis
 Gastrointestinal Bleeding – Lower

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 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
 Hypercortisolism – 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
 Nonmelanoma Skin Cancers
 Paronychia and Felon
 Pilonidal Cyst/Sinus
 Pressure Ulcer
 Soft Tissue Masses – Evaluation
 Soft Tissue Sarcomas

DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

Surgical Critical Care

Abdominal Compartment Syndrome
 Acute Respiratory Distress Syndrome (ARDS)
 Anaphylaxis
 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 (Pulmonary Embolism, Pneumonia)
 Neurogenic Shock
 Neurologic Dysfunction
 Pain, Agitation, and Delirium
 Renal Failure
 Respiratory Failure
 Sepsis and Septic Shock

Trauma

Burns
 Cardiac Injury
 Chest Wall, Pleural and Diaphragm Injuries
 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
 Smoke Inhalation Injury and Carbon Monoxide Poisoning
 Splenic Injury
 Tracheobronchial and Lung Injury
 Trauma in Pregnancy
 Traumatic Brain Injury
 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

DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

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

Chylothorax
Pleural Effusion/Emphyema
Pneumothorax and Pleurodesis

Pediatric Surgery

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

Genitourinary

Acute Urinary Retention
Hydrocele
Scrotal Pain and Masses

Gynecology and Obstetrics

Ectopic Pregnancy
Pelvic Inflammatory Disease

Head and Neck

Neck Mass – Evaluation
Upper Airway Obstruction

DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – ADVANCED

Abdomen – General

Desmoids/Fibromatoses
Peritoneal Neoplasms

Abdomen – Biliary

Primary Sclerosing Cholangitis

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

Breast

Postmastectomy Reconstruction Options

Endocrine

Adrenal Cancer
Multiple Endocrine Neoplasias
Parathyroid Cancer

Skin and Soft Tissue

Lymphedema/Lymphangitis
Pressure Ulcer
Soft Tissue Sarcomas

Surgical Critical Care

Organ Donors and Selection Criteria

DISEASES/CONDITIONSBYLEVEL

Diseases/Conditions – ADVANCED

Trauma

Bite and Envenomation Injuries
 Brachial Plexus Injury
 Extremity Injuries
 Spinal Cord Injury

Vascular – Arterial Disease

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

Transplantation

Organ Preservation

Thoracic Surgery

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

Pediatric Surgery

Aerodigestive Tract Foreign Bodies
 Anorectal Malformations
 Biliary Atresia
 Choledochal Cysts
 Congenital Aganglionsis (Hirschsprung Disease)
 Congenital Diaphragmatic Hernia
 Cryptorchidism
 Esophageal Atresia/Tracheoesophageal Fistula
 Gastroschisis/Omphalocele
 Necrotizing Enterocolitis
 Neonatal Small Bowel Obstruction

Genitourinary

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
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
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
Crohn Disease – Surgical Management
Ileostomy and Ileostomy Closure
Small Intestinal Resection

Alimentary Tract – Large Intestine

Appendectomy
Colectomy – Partial
Colectomy – Total and Subtotal
Colostomy and Colostomy Closure
Ulcerative Colitis – Surgical Management

Alimentary Tract – Anorectal

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

OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – CORE

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

Endocrine

Parathyroidectomy
 Thyroidectomy – Partial or Total

Skin and Soft Tissue

Melanoma – Wide 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
 Duodenal and Pancreatic Injury – Operations
 Esophageal Injury – Repair
 Fasciotomy
 Focused Assessment with Sonography for Trauma (FAST)
 Gastrointestinal Tract Injury – Repair
 Hepatic Injury – Packing and Repair/Resection
 Neck Injuries – Management
 Splenectomy/Splenorrhaphy
 Urinary Tract Injuries – Operations
 Vascular Injuries – Operations
 Wounds, Major – Debride/Suture

Vascular – Arterial Disease

Amputations – Lower Extremity
 Embolectomy/Thrombectomy – Arterial

OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – CORE

Vascular – Access

Vascular Exposure – Principles

Venous Access Devices – Insertion

Thoracic Surgery

Exploratory Thoracotomy – Open and Thoracoscopic

Tube Thoracostomy and Thoracentesis

Pediatric Surgery

Inguinal Hernia – Repair

Intussusception – Operation

Malrotation – Operation

Meckel Diverticulum – Excision

Pyloromyotomy

Umbilical Hernia – Repair

Plastic Surgery

Complex Wound Closure

Skin Grafting

Genitourinary

Cystostomy

Gynecology and Obstetrics

Surgical Considerations in the Pregnant Patient

Head and Neck

Lymph Node Biopsy

Tracheostomy

OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – ADVANCED

Abdomen – Biliary

Bile Duct Cancer – Operation
 Bile Duct Injury, Iatrogenic – Acute Repair
 Bile Duct Neoplasms – Operation
 Choledochoenteric Anastomosis
 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 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 – 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

Ilioinguinal-Femoral Lymphadenectomy
 Soft Tissue Sarcoma – Resection

Surgical Critical Care

Noninvasive and Invasive Cardiac Pacing

Thoracic Surgery

Partial Pulmonary Resections – Open and Thoracoscopic

Trauma

Cardiac Injury – Repair
 Hand Tendon Repairs
 Thermal Injuries – Operations

OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – ADVANCED

Vascular – Access

Arteriovenous Graft/Fistula

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
 Lower Extremity Bypass
 Mesenteric Occlusive Disease – Operation
 Peripheral Aneurysms – Repair
 Superior Mesenteric Artery
 Embolectomy/Thrombectomy
 Ultrasound in the Diagnosis and Management of Vascular Diseases

Vascular – Venous

Vena Cava Filter Insertion
 Venous Insufficiency/Varicose Veins – Operation

Transplantation

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

Pediatric Surgery

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

Genitourinary

Nephrectomy

Gynecology and Obstetrics

Cesarean Section
 Hysterectomy and Salpingo-oophorectomy

Head and Neck

Modified Neck Dissection
 Parotidectomy

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 in Outcome and Health Services Research
- 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 Phosphorus 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 Immunocompromised Hosts
- Transplant Immunology

6. Infection and Antimicrobial Therapy

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

1. Ethical Issues in Clinical Surgery

- Advance Directives
 - Approaching Ethical Issues in Surgery
 - Decision-Making Capacity
 - Do Not Resuscitate
 - Ethics in Global Surgery and Volunteerism
 - Futility
 - Informed Consent
 - Medical Decisions for Pediatric Patients
 - Surrogate Decision Making
 - Withdrawing and Withholding Life-Sustaining Treatments
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- Bullying
 - Bystander Intervention
 - Implicit Bias/Discrimination/Microaggressions
 - Sexual Harassment
 - Diversity and Inclusion Requirements and Assessment in Surgical Environments
 - Diversity and Inclusion Implementation

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 – and The Challenge of Informed Consent
- 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 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 – Team Communication and Respect

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. 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