Introduction

The SCORE General Surgery Curriculum Outline covers a list of topics in a five-year general surgery residency program.

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. Patient care topics cover organ system-based categories, with each category separated into Diseases/Conditions and Operations/Procedures. Topics within these two areas are designated as core or advanced.

- **CORE** modules are 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** modules are 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.

This outline is annually updated and reflects feedback from SCORE member organizations and specialty surgical societies. As the curriculum has evolved, many topics have been consolidated to describe required knowledge more accurately.

The Surgical Council on Resident Education (SCORE®) is a nonprofit organization formed in 2004 by the principal organizations involved in American surgical education. SCORE's mission is to improve the education of trainees in general surgery and related specialties through the development and maintenance of a national curriculum. The SCORE Portal was created to provide high-quality educational content, in support of the SCORE Curriculum Outline, to trainees and their programs.

The SCORE Portal® provides residents and training programs with high-quality educational materials and a structured program for self-learning. SCORE focuses on all areas of general surgery and related specialties as well as fellowship-level content.
Patient Care

General Abdomen

Diseases/Conditions

- Abdominal Pain
- Rectus Sheath Hematoma

- Desmoids and Fibromatoses
- Peritoneal Neoplasms

Operations/Procedures

- Abdominal Exploration
- Peritoneal Dialysis Catheter Insertion

Hernia

Diseases/Conditions

- Inguinal and Femoral Hernias
- Miscellaneous Hernias

- Umbilical and Epigastric Hernias
- Ventral Hernia

Operations/Procedures

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

### Diseases/Conditions

- Benign Biliary Obstruction
- Choledochal Cyst
- Functional Biliary Disorders
- Iatrogenic Bile Duct Injury
- Primary Biliary Neoplasms
- Symptomatic Gallstones and Cholecystitis

### ADVANCED

- Gallbladder Neoplasms
- Primary Sclerosing Cholangitis

### Operations/Procedures

**CORE**

- Cholecystectomy and Cholangiography
- Choledochostomy
- Common Bile Duct Exploration and Choledochoscopy

**ADVANCED**

- Choledochoenteric Anastomosis
- Extended Cholecystectomy for Gallbladder Cancer
- Iatrogenic Bile Duct Injury Repair
- Procedures for Bile Duct Cancer
- Procedures for Bile Duct Neoplasm
- Ultrasound of the Biliary Tree
Liver

Diseases/Conditions
- Cirrhosis and Portal Hypertension
- Hepatic Abscess
- Metastatic Hepatic Neoplasms
- Primary Hepatic Neoplasms

Operations/Procedures
- Hepatic Abscess Drainage
- Liver Biopsy
- Hepatic Resection
- Intraoperative Hepatic Ultrasound

Pancreas

Diseases/Conditions
- Acute Pancreatitis
- Endocrine Pancreatic Neoplasms
- Exocrine Pancreatic Neoplasms
- Chronic Pancreatitis
- Pancreatic Cystic Neoplasms
- Pancreas Divisum

Operations/Procedures
- Distal Pancreatectomy
- Ampullary Tumors
- Intraoperative Pancreatic Ultrasound
- Pancreaticoduodenectomy
- Total Pancreatectomy
Spleen

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

Operations/Procedures
- Splenectomy

Esophagus

Diseases/Conditions
- Esophageal Motility Disorders
- Esophageal Neoplasms
- Gastroesophageal Reflux and Barrett Esophagus
- Hiatal Hernias
- Esophageal Caustic Ingestion and Foreign Bodies

Operations/Procedures
- Antireflux Procedures
  - Cricopharyngeal Myotomy and Resection of Zenker Diverticulum
  - Esophagectomy
  - Heller Esophagomyotomy
  - Paraesophageal Hernia Repair
Stomach

Diseases/Conditions

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

Operations/Procedures

- Access Procedures for Nutritional Support
- Gastrectomy
- Gastroduodenal Perforation Repair
- Vagotomy and Drainage
- Procedures for Morbid Obesity
- Revisional Procedures after Gastrectomy

Small Intestine

Diseases/Conditions

- Acute Mesenteric Ischemia
- Enterocutaneous Fistula
- Meckel Diverticulum
- Paralytic Ileus
- Radiation Enteritis
- Small Intestinal Neoplasms
- Small Intestinal Obstruction
- Enteric Infections and Blind Loop Syndrome
- Short Bowel Syndrome
General Surgery Curriculum Outline | 2023 - 2024

Operations/Procedures

- Adhesiolysis
- Ileostomy and Ileostomy Closure
- Procedures for Crohn Disease
- Small Intestinal Resection

Large Intestine

Diseases/Conditions

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

- Colonic Polyposis Syndromes
- Functional Intestinal Disorders

Operations/Procedures

- Appendectomy
- Colostomy and Colostomy Closure
- Partial Colectomy
- Procedures for Ulcerative Colitis
- Total and Subtotal Colectomy
Anorectal

Diseases/Conditions

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

Operations/Procedures

- Anal Sphincterotomy
- Anorectal Abscess Drainage
- Anorectal Fistula Repair
- Perianal Condylomas Excision
- Procedures for Hemorrhoids

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

Endoscopy

Operations/Procedures

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

Diseases/Conditions

Atypical Hyperplasia, Flat Epithelial Atypia, and Lobular Carcinoma in Situ of the Breast
Benign Inflammatory Disease of the Breast
Breast Disease During Pregnancy and Lactation
Breast Invasive Carcinoma
Ductal Carcinoma in Situ
Fat Necrosis, Fibrocystic Changes, and Radial Scar of the Breast
Fibroadenoma and Phyllodes Tumors of the Breast
Hereditary Breast Cancer
Inflammatory Breast Cancer
Initial Management of a Breast Mass
Male Gynecomastia and Breast Cancer
Management of the Axilla in Breast Cancer
Nipple Discharge and Intraductal Papilloma
Paget Disease of the Nipple
Postmastectomy Reconstruction Options
Radiographic Abnormalities of the Breast

Operations/Procedures

Axillary Procedures in Breast Cancer
Breast Duct Excision
Excisional Breast Biopsy and Partial Mastectomy
Percutaneous Breast Biopsy and Cyst Aspiration
Simple, Modified Radical, and Radical Mastectomy
Endocrine

Diseases/Conditions

Hypercortisolism and Cushing Syndrome/Disease
Hyperparathyroidism
Hyperthyroidism
Incidental Adrenal Mass
Initial Workup of a Thyroid Nodule
Pheochromocytoma
Postoperative Hypothyroidism
Primary Hyperaldosteronism
Thyroid Cancer
Thyroiditis

Adrenal Cancer

Multiple Endocrine Neoplasias
Parathyroid Cancer

Operations/Procedures

Parathyroidectomy
Thyroidectomy

Adrenalectomy
Thyroid Ultrasound
### Skin and Soft Tissue

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<th>Diseases/Conditions</th>
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<td>Procedures for Soft Tissue Infections</td>
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Surgical Critical Care

Diseases/Conditions

- Abdominal Compartment Syndrome
- Anaphylaxis
- Brain Death
- Cardiac Arrest
- Cardiac Failure and Cardiogenic Shock
- Common Cardiac Arrhythmias
- Derangements of Electrolytes and Acid-Base Balance
- Endocrine Dysfunction
- Hepatic Failure and Hepatorenal Syndrome
- Hypovolemic Shock
- Neurogenic Shock
- Neurologic Dysfunction
- Pain, Agitation, and Delirium
- Renal Failure
- Respiratory Failure: ARDS, Pulmonary Embolism, and Pneumonia
- Sepsis and Septic Shock

Operations/Procedures

- Airway Access: Intubation and Surgical Airways
- Ultrasound for Intravascular Access
- Vascular Access
- Cardiac Pacing
Trauma

Diseases/Conditions

Burns
Cardiac Injury
Chest Wall, Pleural, and Diaphragm Injuries
Colon and Rectal Injury
Duodenal and Pancreatic Injury
Esophageal Perforation and Injury
Frostbite and Hypothermia
Gastric and Small Intestinal Injury
Geriatric Trauma
Hepatic Injury
Inhalation Injury
Initial Assessment and Management of Trauma
Initial Assessment and Management of Neck 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 Abdominal Injury
Vascular Extremity Injury
Vascular Neck Injury
Vascular Thoracic Injury

Bite and Envenomation Injuries
Brachial Plexus Injury
Extremity Injuries
Spinal Cord Injury
Operations/Procedures

Abdominal Exploration for Trauma
Escharotomy
Fasciotomy
Focused Assessment with Sonography for Trauma (FAST)
Gastrointestinal Tract Injury Repair
Hepatic Injury Packing, Repair, and Resection
Neck Injuries Management
Splenectomy and Splenorrhaphy
Procedures for Urinary Tract Injuries
Procedures for Vascular Injuries
Wounds Management

Cardiac Injury Repair
Hand Tendon Repairs

Arterial Disease

Diseases/Conditions

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

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

Arterial Embolectomy and Thrombectomy
Lower Extremity Amputations

Abdominal and Aortoiliac Aneurysm Repair
Aortoiliac Reconstruction for Occlusive Disease
Endovascular Intervention Principles
Extra-anatomic Bypass

Graft-enteric Fistula Management
Lower Extremity Bypass
Peripheral Aneurysms Repair
Procedures for Carotid Artery Stenosis
Procedures for Mesenteric Occlusive Disease
Superior Mesenteric Artery (SMA) Embolectomy and Thrombectomy
Ultrasound in the Diagnosis and Management of Vascular Diseases

Vascular Venous

Diseases/Conditions

Evaluation of a Swollen Leg
Thrombophlebitis

Varicose Veins
Venous Stasis and Chronic Venous Insufficiency
Venous Thromboembolism

Operations/Procedures

Vena Cava Filter Insertion
Venous Insufficiency and Related Procedures

Vascular Access

Diseases/Conditions

Vascular Access for Dialysis
Operations/Procedures

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

Transplantation

Diseases/Conditions

- Organ Preservation

Operations/Procedures

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

Thoracic Surgery

Diseases/Conditions

- Chylothorax
- Pleural Effusion and Empyema
- Pneumothorax and Pleurodesis
- Malignant Lung Tumors
- Mediastinal Tumors and Cysts
- Mediastinitis
- Superior Vena Cava Syndrome
**Operations/Procedures**

- Thoracotomy and Thoracoscopy
- Tube Thoracostomy and Thoracentesis
- Pulmonary Resections

**Pediatric Surgery**

**Diseases/Conditions**

- Abdominal Mass
- Acute Abdominal Pain
- Appendicitis
- Hypertrophic Pyloric Stenosis
- Inguinal Hernia
- Intussusception
- Lower Gastrointestinal Bleeding
- Malrotation
- Meckel Diverticulum
- Umbilical Hernia
- Aerodigestive Tract Foreign Bodies
- Anorectal Malformations
- Biliary Atresia
- Choledochal Cysts
- Congenital Aganglionosis (Hirschsprung Disease)
- Congenital Diaphragmatic Hernia
- Cryptorchidism
- Esophageal Atresia and Tracheoesophageal Fistula
- Gastrochisis and Omphalocele
- Necrotizing Enterocolitis
- Neonatal Small Bowel Obstruction
Operations/Procedures

- Inguinal Hernia Repair
- Intussusception Operation
- Malrotation Operation
- Meckel Diverticulum Excision
- Pyloromyotomy
- Umbilical Hernia Repair
- Anorectal Malformations Operation
- Branchial Cleft Anomaly Excision
- Chest Wall Deformity Repair
- Congenital Diaphragmatic Hernia Repair
- Diaphragmatic Hernia Repair
- Esophageal Atresia and Tracheoesophageal Fistula Repair
- Hirschsprung Disease Operation
- Intestinal Atresia and Stenosis Repair
- Meconium Ileus Operation
- Necrotizing Enterocolitis Operation
- Orchiopexy
- Thyroglossal Duct Cyst Excision

Plastic Surgery

Operations/Procedures

- Complex Wound Closure
- Skin Grafting

Genitourinary

Diseases/Conditions

- Acute Urinary Retention
- Hydrocele
- Scrotal Pain and Masses
- Genitourinary Neoplasms
Operations/Procedures
- **Core** Cystostomy
- **Advanced** Nephrectomy

**Obstetrics and Gynecology**

Diseases/Conditions
- **Core** Ectopic Pregnancy
- **Core** Pelvic Inflammatory Disease
- **Advanced** Gynecologic Neoplasms

Operations/Procedures
- **Core** Surgical Considerations of the Pregnant Patient
- **Advanced** Cesarean Section
- **Advanced** Hysterectomy and Salpingo-oophorectomy

**Head and Neck**

Diseases/Conditions
- **Core** Neck Mass Evaluation
- **Core** Upper Airway Obstruction
- **Advanced** Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer

Operations/Procedures
- **Core** Lymph Node Biopsy
- **Advanced** Modified Neck Dissection
- **Advanced** Parotidectomy
Medical Knowledge

Anesthesia

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

Biostatistics and Evaluation of Evidence

- Bias in Research Design and Studies
- Study Design
- Tests of Significance and Measures of Long-term Survival

Fluids, Electrolytes, and Acid-Base Balance

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

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
Immunology

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

Infection and Antimicrobial Therapy

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

Minimally Invasive Surgery – Principles

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

Nutrition and Metabolism

Nutritional Assessment
Nutritional Requirements
Nutritional Support

Oncology and Tumor Biology

Adjunctive Therapy for Cancer
Tumor Immunology
Preoperative Evaluation and Perioperative Care

- Common Postoperative Problems
- Evaluation of Surgical Risk
- Management of Perioperative Risk
- Mechanical Ventilation
- Postoperative Pain Management
- Prophylaxis of Venous Thromboembolism

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

Wound Healing

- Wound Closure and Postoperative Care
- Wound Healing

Professionalism

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
- Substituted Judgment: The Role and Care of Surrogates
- Withdrawing and Withholding Life-Sustaining Treatments
Diversity and Inclusion

- Allyship and Bystander Intervention
- Diversity in the US Surgical Workforce
- Principles of Disparities in Surgical Care
- Surgical Care of LGBTQIA+ Patients

Managing a Career in Surgery

- Surgical Ergonomics

Interpersonal and Communication Skills

Non-Technical Skills for Surgeons (NOTSS)

- Cognitive Skills (Situation Awareness and Decision Making)
- Social Skills (Communication, Teamwork and Leadership)
- The Provider Awareness and Cultural Dexterity Toolkit for Surgeons (PACTS)

Surgical Professionalism and Interpersonal Communication Education (SPICE)

- Advanced Communication Skills and the Challenges of Informed Consent
- Communicating Medical Errors
- Working Through Language Barriers and Differing Customs
- Delivering Grim Prognoses and Other Bad News
- Giving and Getting Feedback
- Career Management (Making Important Professional and Personal Decisions)
- Safe Handoff of Patient Care Duties
- Signs of Stress, Depression, and Suicide in Surgical Practice
- Working with Professionals (Team Communication and Respect)
Systems-based Practice

**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

Practice-based Learning and Improvement

**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