

General Surgery Clinical Rotation

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General Description

Required Rotation

This required rotation of no less than four (4) weeks in a hospital-based service is intended to be a structured clinical experience under direct supervision. In a short time, all of General Surgery cannot be possibly covered; this must therefore be considered an introductory experience. This rotation is a time to build a foundation in clinical problem solving and decision-making, a time to build clinical experience and acumen on a foundation of didactic information. Upon completion of the rotation, the student should be able to elicit a surgical history, perform a physical examination, obtain appropriate laboratory studies, assess the results, develop a diagnosis, formulate a management plan, and assist in implementation of appropriate therapy for common surgical principles and practices. The College of Osteopathic Medicine, Department of Surgery will administer a post-rotation examination when the student has completed this required rotation. **Students are required achieve a passing exam score of at least 65% and all Online Interactive Cases must be completed to pass the rotation. (All online interactive cases must be completed by the starting date of the students next rotation (Monday following the Surgery Clerkship- NO EXCEPTIONS)).**

Required Textbooks:

Becker JM and Stucchi AF. *Essentials of Surgery*, 1st ed., Saunders Elsevier, 2006.
Department of Surgery. *Basic Surgical Skills Course Pack*, Lab #2115. (received during year 2)

Optional Textbook:

- Adams, G. *Surgery Clerkship Guide*, 2003, Mosby Inc. *Highly recommended*

Required Assigned Online Case Studies and Quizzes: located on Angel and WISE MD.

Online Interactive Cases (ANGEL cases and WISEMD cases) must be completed to pass the rotation. (All online interactive cases must be completed by the starting date of the students next rotation (Monday following the Surgery Clerkship- NO EXCEPTIONS)).

Clinical Skills Log

PDA case/clinical/ethical skills log (Clinical Affairs required log). It is the student's responsibility to keep these logs current on a daily bases.

Clinical Skills Review and Surgery Procedure Videos

Found on the Angel Surgery Clerkship Site. Skills Review videos are from Access Surgery and Procedure Videos are from The New England Journal of Medicine to help you review and prepare for skills and procedures while on your clerkship rotations.

NOTE: The students have been instructed that even though they have been checked off in a skill, this **DOES NOT** entitle them to perform that skill without supervision by an attending or resident.

Student Responsibility

It is required that the student meet with their preceptor at the beginning of the rotation to discuss the learning objectives outlined in this document. Students should also seek and receive preceptor feedback midway through the rotation. The student should also seek experiences to further develop a variety of clinical skills previously taught in the Basic Surgical Skills Course.

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Prerequisites

A student may not start any clinical rotation (required or elective) in surgery until all preclinical course work has been successfully completed and completion of Part I of the COMLEX exam.

Purpose

This rotation provides didactic and clinical experiences that will support the development of skills required to meet the entry level competencies for students preparing to enter a residency program. The competencies endorsed by the American Osteopathic Association and the objectives of this rotation are as follows:

Competencies

To help the student with preparing for the exam and the surgery rotation experience, objectives and corresponding reading assignment guidelines have been established. Categories have been assigned per week for emphasis during the surgery rotation.

WEEK 1:

Osteopathic Philosophy and Osteopathic Manipulative Medicine

REQUIRED READING:

Essentials of Surgery: What are Core Competencies? pp 13-16

OBJECTIVES: Osteopathic Philosophy and Osteopathic Manipulative Medicine

1. Demonstrate the ability to perform and record an osteopathic structural examination on a surgical patient and document such using acceptable osteopathic terminology.
2. Demonstrate the application of the osteopathic philosophy into the pre- and post-operative care of the surgical patient.
3. Demonstrate an understanding of palpatory findings which are found in common conditions encountered in a surgical practice.
4. Understand and be able to initiate Osteopathic Manipulative Treatment in the surgical patient for post-operative ileus and atelectasis.

Interpersonal and Communication Skills

REQUIRED READING:

Essentials of Surgery: pp 5-8

BSS Packet: Review documentation 200-220

Angel Article: Communication and Leadership

OBJECTIVES: Interpersonal and Communication Skills

1. Communicates effectively with attending, resident, team members and other health care professionals.
2. Documentation in medical records is legible.
3. Communicates appropriately and professionally to patient and family members.
4. Demonstrates ability to develop and execute patient care plans appropriate for level of training and follows the SOAP/problem oriented format.

Professionalism

REQUIRED READING:

Angel Article: Professionalism

OBJECTIVES: Professionalism

1. Demonstrates a commitment to continuity of patient care.
2. Displays a sense of responsibility and respect to patients, families, staff and peers.
3. Demonstrates cultural sensitivity.
4. Maintains a professional appearance, well-groomed, appropriately dressed.

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5. Punctual in attendance, prompt and available when called upon.
6. Motivated to learn, shows appropriate assertiveness, flexibility, adaptability toward education.
7. Demonstrates appropriate attitude, cooperative, receptive to feedback.
8. Demonstrates an eagerness and willingness to help out, takes an active contributing role within the health care team, ***“Always be prepared.”***
9. Follows through or completes responsibilities assigned or volunteered and reports back to preceptor.

Practice-Based Learning

REQUIRED READING:

Angel Article: Systems-Based Care/Practice-Based Learning

OBJECTIVES: Practice-Based Learning

1. Demonstrates motivation and a desire to learn.
2. Demonstrates the ability to learn from practice.
3. Critiques personal practice outcomes appropriate to level of training.
4. Demonstrates a recognition of the importance of lifelong learning in medical/surgical practice.
5. Seeks and responds to feedback.
6. Demonstrates being a “self -directed learner”.
7. Seeks out more information than what is required or expected.

Systems-Based Practice

REQUIRED READING:

Angel Article: Systems-Based Care/Practice-Based Learning

OBJECTIVES: Systems-Based Practice

1. Know where to go for help—personal and professional.
2. Attends all required orientations presented by the facility and completes needed paperwork for rotation.
3. Follows policy and procedures set forth by the health care facility and departments within that facility.
4. Follows the policies for a medical student at the surgery rotation facility.
5. Report to appropriate institutional authority when absent following Clinical Affairs guidelines.

Patient Care

REQUIRED READING:

BSS Packet: Review entire

OBJECTIVES: Patient Care Objectives

1. Discusses decisions about diagnostic and therapeutic interventions based not only on the data gathered, but also based on patient preferences.
2. Perform and record adequate and appropriate history and physical examination.
3. Demonstrate and discuss the principles of clean and sterile technique including gowning and gloving.
4. Demonstrate understanding of basic OSHA guidelines in patient care areas.
5. Discuss the indications and observe arterial puncture technique
6. Discuss and observe placement of central venous line.
7. Discuss indications for and observe placement of vascular access ports and long-term central venous catheters.
8. Discuss the assessment and management of nutritional states in the surgical patient.
9. Discuss indications for use of blood products in the surgical patient
10. Demonstrate knowledge of closed suction drainage systems.
11. Demonstrate knowledge of wound care, including suture and staple removal.
12. Demonstrate Osteopathic principles and practices in the surgical patient.

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13. Documentation is appropriate, neat, legible, efficient and accurate, i.e. orders, post-op notes, progress notes, discharge orders.

OBJECTIVES: Basic Psychomotor Skills

1. Demonstrate ability to scrub, gown, glove alone and with assistance, and to maintain proper sterile techniques in the surgical setting.
2. Demonstrate knowledge of and proper usage of commonly used surgical instruments.
3. Perform simple surgical procedures i.e. punch biopsy, excision of a lesion, incision and drainage of a simple abscess, and securing a wound drain with supervision.
4. Suturing laceration and surgical wounds
5. Stapling of lacerations and surgical wounds
6. Removal of sutures and skin staples
7. Steri strip use in lacerations and surgical wounds
8. Drainage of simple abscesses
9. Surgical dressings
10. Removal of surgical drains
11. Demonstrate knowledge of indications for insertion of urinary catheter and management of daily care.
12. Demonstrate knowledge of indications for insertion of nasogastric tubes and management of daily care.
13. Demonstrate three-dimensional awareness in laparoscopic settings while operating camera for procedures.
14. Demonstrate how to assist in securing hemostasis of wounds, i.e. direct pressure, hand ties and/or cauterization.

Medical Knowledge

Successful Surgery Clerk

REQUIRED READING:

Basic Surgical Skills Packet: Review packet
Essentials of Surgery: pp1-4, 9-11

Optional Reading:

Surgery Clerkship Guide: pp 3-9

OBJECTIVES: Successful Surgery Clerk

1. Discuss the role of a successful surgery clerk.
2. Discuss your day-to-day inpatient responsibilities.

Surgical Patient

REQUIRED READING:

Essentials of Surgery pp 17-29, 440-445

Optional Reading:

Surgery Clerkship Guide: pp 10-22; 143-147

OBJECTIVES: Surgical Patient

1. Discuss the value of the preoperative assessment, selected diagnostic tests, preoperative screening tests and the goal of outside consultation in evaluating a patient.
2. Discuss the role that antibiotics play in surgical patients pre- and post-operative.
3. Discuss the assessment of cardiac and pulmonary risk.
4. Discuss the documentation required in the medical record of a surgical patient, post-op note, operative report, physician's orders and daily progress notes.
5. Discuss common post-operative complications and their treatment.
6. Discuss pain management in the post-operative patient.

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7. Discuss the role of prophylactic treatments to prevent deep vein thrombosis.
8. Discuss pulmonary emboli signs, symptoms and treatment.

Fluids, Electrolytes and Nutrition

REQUIRED READING:

Essentials of Surgery: pp 30-41:Fluids/Electrolytes, 42-53:Nutrition

Optional Reading:

Surgery Clerkship Guide: pp 430-458

OBJECTIVES: Fluids and electrolytes

1. Identify the fluid compartments in the body and the distribution of fluids and electrolytes within them.
2. Explain the basic changes that occur in a surgical patient, i.e. hemorrhage, persistent vomiting or diarrhea, intestinal obstruction, dehydration.
3. Indicate normal daily requirements of fluids and electrolytes for adult and pediatric patients.
4. Describe the concept of acid-base balance, how this is maintained and the role of the kidney and lungs in this process.
5. Describe the daily sensible and insensible fluid and electrolyte losses in the routine post-operative patient.

OBJECTIVES: Nutrition

1. Perform a nutritional assessment of a patient.
2. Classify the types of malnutrition and the characteristics of each.
3. Indicate the basic nutritional requirements of any patient, including calorie, protein, carbohydrates, fats, electrolytes, trace elements and vitamins.
4. Select those patients that require nutritional support and in specific cases, choose the route of that support.

Surgical Bleeding and Blood Replacement

REQUIRED READING:

Essentials of Surgery: pp 56-61

Optional Reading:

Surgery Clerkship Guide: pp 137-142; 388-405

OBJECTIVES: Surgical bleeding and blood replacement

1. Explain the coagulation cascade and describe the lab tests used to assess clotting status, discussing application to the specific diseases.
2. Identify the common coagulopathies.
3. List the component blood products currently available, their safety and indications for the use of each.
4. Recognize and explain the etiology and treatment of disseminated intravascular coagulopathy (DIC).

WEEK 2:

Wounds, Wound Healing and Surgical Infections

REQUIRED READING:

Essentials of Surgery: pp 62-72:Wounds/Healing, 73-82:Surgical Infections

Assigned Online Case Study: Angel Case

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Optional Reading:

Surgery Clerkship Guide: pp 143-147; 172-177

OBJECTIVES: Wounds and Healing

1. Describe the cellular physiology of each phase of wound healing.
2. List those factors that promote or impair normal healing.
3. Have a basic understanding of suture materials in both operating room and ambulatory situations.

OBJECTIVES: Surgical Infections

1. Classify types of operative infections seen in major surgery.
2. Describe and manage surgical infection in terms of prophylaxis and active treatment including selection of wound closure, management of drains and antibiotics.
3. Recognize signs and symptoms of wound infection and describe the treatment necessary in both early and late post-operative patients.
4. Discuss the causes of post-operative fevers.
5. Discuss the prevention and management of surgical infection.

Skin Disease, Malignant/Benign and Infectious Diseases

REQUIRED READING:

Essentials of Surgery: pp 754-762

Assigned Online Case Study: WISE MD Case

Optional Reading:

Surgery Clerkship Guide: pp 406-418; 459-468

OBJECTIVES: Malignant Diseases of the Skin, the Lymphatics, and Soft Tissue

1. Benign: be able to recognize and treat sebaceous cyst, lipoma, infection, and abscess.
2. Malignant:
 - a. Melanoma:
 - i. List the predisposing factors and identify the categories of melanoma.
 - b. Basal cells/squamous cell carcinoma:
 - i. List the predisposing factors and contrast the physical characteristics, outline the necessary steps in confirming their diagnoses, and describe the medical and surgical therapy for them.

Acute Abdomen

REQUIRED READING:

Essentials of Surgery: pp 130-135

Assigned Online Case Study: Angel Case and WISE MD Case

Optional Reading:

Surgery Clerkship Guide: pp 25-73

OBJECTIVES: Acute abdomen

1. Identify a patient with acute abdominal process.
2. Demonstrate a plan of action for the patient with an acute abdomen.
3. Describe the diagnostic studies indicated and how each may contribute to the diagnosis, for a patient presenting with physical findings of peritonitis.
4. Assemble a list of differential diagnosis for each of the following areas:
 - RUQ
 - LLQ
 - Suprapubic area
 - RLQ
 - LUQ
 - Epigastrium

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- Diffuse abdominal pain

Hernias

REQUIRED READING:

Essentials of Surgery: pp 146-155

Assigned Online Case Studies: Angel Case and WISE MD Case

Optional Reading:

Surgery Clerkship Guide: pp 82-87; 181-190

OBJECTIVES: Hernias

1. Identify anatomic differences between direct inguinal, indirect inguinal and femoral hernia.
2. Explain the embryology leading to the development of inguinal hernia/hydrocele.
3. Identify and discuss the management of umbilical hernia in adults and children.

WEEK 3:

Esophagus, Stomach, and Small Bowel

REQUIRED READING:

Essentials of Surgery: pp 318-336:Esophagus; 296-317, 286-295:Stomach/Small bowel, 257-264:Motility Disorders

Assigned Online Case Study: Angel Case and WISE MD Case

Optional Reading:

Surgery Clerkship Guide: pp 315-352; 376-387

OBJECTIVES: Esophagus

1. Discuss the anatomy and physiology of the esophagus.
2. Discuss the common benign disorders of the esophagus.
3. List those diseases presenting with dysphagia and discuss the differential diagnosis.
4. Discuss malignant disease of the esophagus.

OBJECTIVES: Stomach and small bowel

1. Discuss the normal anatomy and physiology of the stomach and duodenum.
2. Discuss diagnostic value of UGI retroentgenography and esophagogastroduodenal endoscopy.
3. Discuss pathophysiology, natural history, diagnosis, and complications of peptic ulcers.
4. Discuss symptoms and work-up, staging and treatment of a patient with gastric carcinoma.
5. Recognize the presenting symptoms in a patient with mechanical small bowel obstruction, document what studies are required to confirm the diagnosis, and outline a management plan.
6. Discuss motility disorders.

Appendix, Colon, Rectum and Anus

REQUIRED READING:

Essentials of Surgery: pp 218-239:Colon/Anorectum, 240-255:Inflammatory Bowel Disease, 136-145:Appendix

Assigned Online Case Studies: Angel Case and WISE MD Cases

Optional Reading:

Surgery Clerkship Guide: pp 263-284; 304-314

OBJECTIVES: Appendix Colon and Rectum

1. Discuss the pathophysiology of appendicitis.
2. Recognize symptoms, physical findings and laboratory findings that enable one to make a diagnosis of acute appendicitis.

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3. Discuss the differential diagnosis of acute appendicitis and how diseases with similar symptoms can be distinguished from appendicitis.
4. Explain the common causes of lower gastrointestinal bleeding, their presentation and diagnostic workup.
5. Discuss the TNM classification and Dukes classification of colorectal cancer.
6. Discuss the current status of genetics in the development of colon cancer.
7. Compare and contrast the diagnosis and management of Crohn's disease of the colon and ulcerative colitis.
8. Discuss the pathophysiology of diverticulosis and diverticulitis and list the complications of each.
9. Explain the pathophysiology of hemorrhoids, clinical recognition, medical management, indication for surgical treatment available.
10. Recognize the symptoms and treatment of perianal, ischiorectal abscess and fistula-in-ano.
11. Discuss the indication for, limitations and benefits of flexible sigmoidoscopy and colonoscopy.

Biliary and Pancreas

REQUIRED READING:

Essentials of Surgery: pp 156-173:Biliary Tract, 265-278:Pancreas
Assigned Online Case Studies: Angel Case and WISE MD Case

Optional Reading:

Surgery Clerkship Guide: pp 88-93; 285-303; 361-375

OBJECTIVES: Biliary Tract

1. List the common types of gallstones and discuss the pathophysiology involved in their formation.
2. Discuss differential diagnosis, diagnostic tests and treatment associated with patient presenting with upper right abdominal pain, chills, fever and jaundice.

OBJECTIVES: Pancreas

1. Discuss the basic anatomy and physiology of the pancreas.
2. State the most common etiologies and diagnosis of pancreatitis.
3. Discuss Ranson's criteria of severity and prognosis of pancreatitis.
4. Describe the diagnostic evaluation of a patient presenting with painless jaundice.

WEEK 4:

Breast

REQUIRED READING:

Essentials of Surgery: pp 472-490
Assigned Online Case Study: Angel Case and WISE MD Case

Optional Reading:

Surgery Clerkship Guide: pp 47-56

OBJECTIVES: Breast

1. Describe the pathophysiology, presentation and management of fibrocystic disease of the breast.
2. Identify the risk factors for breast cancer.
3. Explain the recommendations for screening of breast cancer, including physical examination, mammography and ultrasound.
4. Discuss the TNM classification of breast cancer.
5. Discuss common infections and benign lesions of the breast.

Trauma

REQUIRED READING:

Essentials of Surgery: pp 83-105
Assigned Online Case Studies: Angel Case and WISE MD Case

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Optional Reading:

Surgery Clerkship Guide: pp 469-550

OBJECTIVES: Trauma

1. Discuss initial management of a patient who has sustained blunt abdominal trauma.
2. Describe the initial management of the patient who has sustained penetrating abdominal trauma.
3. Discuss diagnostic modalities in the patient with abdominal trauma.
4. Discuss the diagnosis and management of patients undergoing thoracic trauma, including pneumothorax, hemothorax, flail chest, and aortic dissection.

Implementation

Course objectives are to be accomplished in a College affiliated hospital or clinical facility, under supervision. Basic objectives must be covered during the rotation to assure adequate student preparation for Board examinations and other evaluations such as post-rotation examinations. The use of diverse methods appropriate to the individual and the clinical site are encouraged, but patient-centered teaching is optimal.

Didactic methods to achieve required objectives include:

- reading assignments
- lectures
- computer-assisted programs
- student attendance at/participation in formal clinical presentations by medical faculty.

Clinically oriented teaching methods may include:

- assignment of limited co-management responsibilities under supervision
- participation in clinic visits, daily patient rounds and conferences
- supervised and critiqued clinical work-ups of patients admitted to the surgical service
- general surgery case study and scrub assignments.
- patient chart documentation performed under supervision, i.e. post-op note, admission orders, floor orders, progress notes, discharge instructions, discharge summary and prescription writing.

Three levels of achievement are identified:

- familiarity with a variety of medical procedures through observation and assisting
- proficiency in clinical procedures through actual supervised performance
- awareness of the availability of various medical procedures and their use.

Evaluations of students must be completed within one week from completion of the rotation. On the last day of service, the supervising physician should review the student's performance with the student and have the student sign the evaluation form before submission. A student's signature simply indicates that the student has received a grade directly from the attending; it does not indicate agreement with the grade received.

Mandatory Interactive Online Cases

The Department of Surgery has developed mandatory ***Interactive Online Cases*** assigned throughout the surgery rotation. The ***Assigned Online Cases*** are listed with the reading assignments found in this document under medical knowledge. It is highly recommended to complete these cases with your weekly reading assignments and not wait until the end of the rotation. **Students failing to complete all cases by the starting date of their next rotation (Monday following the Surgery Clerkship) will receive a grade of "FAIL" for the rotation. NO EXCEPTIONS.** There will **NOT** be a substitute or make-up for the incomplete cases.

Post-Rotation Examinations

Des Moines University Department of Surgery will require a mandatory, comprehensive examination for students completing their required General Surgery clerkship rotation during Year 3. Post-Rotation exams will be available online through Des Moines University's Portal on Angel and should be arranged,

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by the student, through the DME's office, library or clinical education office at each institution. This exam will provide the student an opportunity to be informed of his or her progress in the clerkship. **It is highly recommended to take the exam during the last week of the General Surgery rotation and it must be completed within 1 week from completion of the rotation.** Passing score for the initial exam is 70%.

A retake exam will be available to those who fail the initial exam, 70% is the passing score for the retake. The retake is to be taken within 2 weeks of the initial exam date. Those failing the retake will be required to complete an **oral exam** with at least two members of the DMU general surgery faculty. The student will need to notify the Chair or his or her secretary immediately following the **failure of the retake exam so that an oral exam may be scheduled at DMU.** The final exam grade will be determined by the Department of Surgery at the completion of the oral exam. The student is responsible to make all arrangements, including the scheduling of the exam time with the Department of Surgery, scheduling time away from their rotation that they are presently on and travel expenses. **The oral exam will be video-taped.**

Texts and Resources

Required Assignment Texts:

- Becker JM and Stucchi AF. **Essentials of Surgery**, 1st ed. , Saunders Elsevier, 2006
- Department of Surgery. **Basic Surgical Skills Course Packet/Notebook**. Course #2115.
- Assigned Online Case Studies and Quizzes. **ANGEL Cases and WISE MD Cases**

Required PDA Clinical Skills Log

PDA case/clinical/ethical skills log. It is the student's responsibility to keep these logs current on a daily bases. (Clinical Affairs Logbook)

Clinical Skills Review and Surgery Procedure Videos

- Found on the Angel Surgery Clerkship Site. Skills Review videos are from Access Surgery and Procedure Videos are from The New England Journal of Medicine to help you review and prepare for skills and procedures you may be asked to perform, assist or given the opportunity to do while on clerkship rotations.

Suggested Reference Text:

- Adams, G. **Surgery Clerkship Guide**, 2003, Mosby Inc.

Additional Helpful Reading Resources:

- Abernathy & Abernathy. **Surgical Secrets**. 5th Ed., 2004, Philadelphia: Hanley & Belfus.
- Blackburne, LH. **Surgical Recall (Print and Audio)**. 4th Ed., 2006, Baltimore: Lippincott, Williams & Wilkins.
- Brunicaardi FC, et al. **Schwartz's Principles of Surgery**. 8th Ed., 2004, McGraw-Hill.
- Cameron, John L. **Current Surgical Therapy**. 9th Ed., 2007, Mosby-Year Book Inc.
- Condon, Nyhus. **Manual of Surgical Therapeutics**. Little, Brown and Co., (spiral bound), 9th Ed., 1996. This small pocket reference will be very handy for quick reference and usefulness on ward rounds. Focuses on non-operative aspects of surgical care.
- Dyke, Cornelius. **Surgical Attending Rounds**. 3rd Ed., 2004, Lippincott Williams & Wilkins; Dyke CM and DeMaria EJ (Eds) (Case Studies).
- Jacobs, DO. **First Exposure to General Surgery**. 1st Ed., 2007, McGraw-Hill Companies.
- Levien, DH. **Introduction to Surgery**. 3rd Ed., 1999, Philadelphia: W. B. Saunders.(case studies)
- Mann, Barry D. **Surgery A Competency-Based Companion**. 2009, Philadelphia: Saunders Elsevier.

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- Maxwell, Robert W., **Maxwell Quick Medical Reference**. 5th Ed., 2006, Maxwell Publishing Co.
- O'Leary, J.P. & Capote, L.R. **Physiologic Basis of Surgery**. 4rd Ed., 2007, Baltimore: Lippincott, Williams & Wilkins.
- Skandalakis, John. **Surgical Anatomy and Technique**. 2nd Ed. 2000, New York: Springer-Verlag.
- Silen, W. **Cope's Early Diagnosis of the Acute Abdomen**. New York: Oxford University Press, 2000. This pocket size classic is a "must read" for its timelessness and direction in evaluating abdominal pain.
- Townsend, CM. et al. **Sabiston Textbook of Surgery: Expert Consult (Online and Print)**. 18th Ed., 2007, Philadelphia: W.B. Saunders, (Sabiston).
- Townsend. **Pocket Companion to Accompany Sabiston Textbook of Surgery**. 4th Ed., 2004, Philadelphia: W.B. Saunders.