

SURGICAL MEDICINE ROTATION LEARNING OBJECTIVES

The following pages outline the learning objectives for this clinical experience. They are designed to guide students in their clinical activities and supplemental reading. It is not the Program's intention that students will be exposed to this complete list of objectives during the clinical experience. This section is designed to assist students in their preparation for the surgical medicine end-of-rotation exam.

LEARNING OBJECTIVES FOR MEDICAL KNOWLEDGE

Upon completion of this clinical experience, the student will be expected to competently *recognize and apply knowledge to compare, differentiate and evaluate* the:

- **etiology, epidemiology, risk factors and pathophysiology (if appropriate)**
- **clinical manifestations**
- **differential diagnosis**
- **assessment (including recommendation and interpretation of laboratory, diagnostic and radiological studies/findings)**
- **Understand the surgical, nonsurgical, pharmacological and non-pharmacological management**
- **prognosis, complications, prevention and patient education**

of the following diseases/disorders/symptoms/post-operative complications:

Skin

Lipoma
Neoplasm
Pilonidal cyst
Chronic non-healing ulcers/wounds

Endocrine

Adrenal cancer
Thyroid (mass, cancer)
Parathyroid disorders
Pheochromocytoma
Pituitary adenoma, cancer
Identify and recognize the most common type of thyroid malignant tumor

Breast

Breast mass (palpable, non palpable, benign, malignant)

Lung

Lung (mass, cancer)
Pleural effusion

Gastrointestinal

Malignancies (oral, esophageal, stomach, intestinal, rectal, pancreatic)
appendicitis
perforated hollow viscus
cholecystitis/cholelithiasis
biliary colic

liver (mass, cancer)	diverticulitis acute pancreatitis
abdominal aortic aneurysm	nephrolithiasis
intestinal obstruction	inflammatory bowel disease
esophageal reflux, strictures & varices	intussusception
ischemic bowel	pyloric stenosis
hemorrhoids	Meckel's diverticulum
ulcers- gastric, duodenal, peptic	colonic polyps
ileus	volvulus
peritonitis	bariatric surgery
hernias (hiatal, femoral, inguinal, incisional, umbilical)-incarcerated & strangulated hernia	
Identify and discern the indications for a colostomy and ileostomy	

Genitourinary and Prostate

Malignancies – bladder, testicular, uterine, prostate
 Scrotal masses (hydrocele, varicela)
 Wilm's tumor
 Identify and discern the indications for a Urostomy

Vascular

Deep vein thrombosis (DVT)
 Acute arterial occlusion
 Abdominal aortic aneurysm/dissection
 Peripheral arterial/venous insufficiency/embolism/thrombosis
 Gangrene
 Mesenteric artery occlusion/Mesenteric ischemia

Pre-operative Care

Perform an appropriate pre-operative evaluation, including risk factor identification, a diagnostic workup, initiate management and prevention (if appropriate) for the following types of patients:

- a. Healthy adult
- b. Pediatric
- c. Geriatric
- d. Morbidly obese
- e. Pregnant woman
- f. Malnutrition
- g. Patients with the following pre-existing conditions/diseases:
 - Cardiac (HTN, MI, CHF, Angina, Valvular dx)
 - Respiratory (Asthma, COPD, URI)
 - Renal (ARI, CKD, ESRF)
 - Liver (Hepatitis, Cirrhosis)
 - Endocrine (Diabetes, Thyroid disease, adrenal insufficiency)
 - Hematologic (Anemia, bleeding and clotting disorders)
 - Immunocompromised (HIV, AIDS, chemotherapy, etc.)

1. Identify the parameters used to determine whether antibiotic prophylaxis is needed for a surgical patient and be able to apply in a case scenario.
2. Identify the common pathogens and recommend the appropriate antibiotic for GI, orthopedic and vascular surgeries.
3. Identify appropriate components of and appropriately document a pre-operative note.

Post-operative Care

Perform an appropriate post-operative evaluation, including a diagnostic workup, initiate management and complication prevention (if appropriate) for the following types of patients:

- a. Healthy adult
- b. Pediatric
- c. Geriatric
- d. Morbidly obese
- e. Pregnant woman
- f. Malnutrition
- g. Patients with the following pre-existing conditions/ diseases:
 - Cardiac (HTN, MI, CHF, Angina, Valvular dx)
 - Respiratory (Asthma, COPD, URI)
 - Renal (ARI, CKD, ESRF)
 - Liver (Hepatitis, Cirrhosis)
 - Endocrine (Diabetes, Thyroid disease)
 - Hematologic (Anemia, bleeding and clotting disorders)
 - Immunocompromised (HIV, AIDS, chemotherapy, etc.)

1. Apply the following components of routine post-operative care

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| • pain management (medication choice, appropriate dosing, routes) | • activity |
| • advancing diet | • wound management |
| • fluid | • routine labs |
| • input/output | |

2. Post-operative complications:

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| • Acid/base disorders | • pneumonia |
| • atelectasis | • pressure ulcer |
| • deep vein thrombosis (DVT) | • pulmonary embolus(PE) |
| • electrolyte disorders | • sepsis |
| • fever | • urinary tract infection (UTI) |
| • internal hemorrhage | • wound infection/dehiscence |
| • pleural effusion | |

- a. In addition to the Learning objectives noted at the beginning of the objective, determine the likely complication using time of occurrence during the recovery process as a component

Additional Objectives:

1. Differentiate the advantages, disadvantages, indications, contraindications and complications of laparoscopic surgery as compared to the traditional open technique.
2. Differentiate the four classifications of wounds and recommend the appropriate use and choice of antibiotics for each.
3. Identify technique; the rationale for performing the following physical exam tests and the clinical significance of positive/negative findings:
 - a. Psoas sign test
 - b. Obturator sign
 - c. Rovsing's sign
 - d. Murphy's sign
 - e. Rebound tenderness and guarding

LEARNING OBJECTIVES FOR SURGICAL SKILLS

Recognize, perform and/or assist in the following procedures and identify the indications and potential complications (when applicable) for each:

- placement and positioning of patient on operating table
- surgical scrub, gowning and gloving using sterile technique
- surgical prep and draping of patient
- maintenance of sterile field
- suctioning and retraction
- clamp, suture tie or ligature of hemorrhage
- electrocautery
- cryotherapy
- one and two handed knot tying
- instrument knot tying
- suture and staple placement and removal
- wound dressing and bandaging
- surgical drain/tube placement and removal
- nasogastric tube placement

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LEARNING OBJECTIVES FOR PHARMACOTHERAPEUTICS

Students will also be expected to *discern* the **properties of the following drug or drug classes including mechanism of action, interactions, contraindications, and major and common side effects and appropriate dosing and routes of administration** in the surgical patient . Students will also be expected to *discern* the appropriate **patient education and necessary follow up** required for the following drugs or drug classes.

Analgesics (opioid, ASA, APAP, NSAIDs)
Anesthetics
Class 2017 Clinical Handbook

Anticoagulants
Antiemetics

Beta blockers
Fluids (IV, PO)
Indications and appropriate dosing of an opioid for a PCA pump

Oral and IV antibiotics
Thrombolytics

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LEARNING OBJECTIVES FOR DIAGNOSTICS

Students will be expected to appropriately **recommend**, **interpret** the findings, **identify** causes for false positive/negative, and **recognize the indications/clinical significance** of the following diagnostic studies. In addition students will be expected to discern appropriate **management** (including counseling and informed consent) when *abnormalities* are found in the following routine tests, and recognize the **potential complications** for each:

Abdominal flat plate x-ray	Needle aspiration biopsy
Abdominal obstruction series	Paracentesis
Bone scan	Percutaneous transhepatic cholangiography (PTHC)
Chest x-ray (CXR)	Pulmonary arteriogram
Ct of abdomen, pelvis and chest	Radioiodine scan
Duplex ultrasound	Radionucleotide scans
Mammography	V/Q scan
MRI	Vascular doppler
Ultrasound of abdomen	Venography
Ultrasound of breast	Arterial blood gases (ABG)
Ultrasound of the gallbladder	Blood type and cross
Upper/lower gastrointestinal series	Carcinoembryonic antigen (CEA)
Arteriography	Complete blood count w/ differential
Biopsy with needle localization	Complete metabolic panel (CMP)
Bronchoscopy	Culture & sensitivity
Cholangiopancreatography (ERCP)	Fecal occult blood
Colonoscopy/sigmoidoscopy	Liver function tests (LFT) & enzymes
Culdocentesis	Partial thromboplastin time (PTT)
Endoscopy	Prostatic specific antigen (PSA)
Gastroduodenoscopy	Prothrombin time (PT)
Hepatobiliary iminodiacetic acid scan	Serum amylase & lipase
Intraoperative cholangiogram	
Intravenous urogram (ivp)	

END OF SURGICAL MEDICINE LEARNING OBJECTIVES