General Surgery Residency  
Loma Linda University Medical Center

RCRMC General Surgery (Blue) Goals and Objectives

PGY 5

Goals:

Riverside County Regional Medical Center will provide a learning environment for various gastrointestinal surgical pathology, general surgical, vascular and trauma issues. Surgical basic science, including fluids and electrolytes, wound healing and nutrition, will be emphasized. Clinically, residents will assess surgical pathology pre-operatively, develop clinical judgment on managing these issues, and learn operative skills to address the problem. Careful postoperative care and follow up will be emphasized. Residents will develop cognitive and technical skills in dealing with complex gastrointestinal pathology.

Objectives:

Medical Knowledge

Describe the anatomy of the breast.

Explain the hormonal regulation of the breast.

Summarize the incidence, epidemiology, and risk factors associated with breast cancer.

Distinguish between these common entities in the differential diagnosis of breast masses:
- fibroadenomas
- fibrocystic disease
- cysts
- fat necrosis
- abscesses and cancer

Explain the general indications, uses, and limitations of mammography.

Discuss the principles and historic context of the basic options available for the treatment of breast cancer such as:
- Radical mastectomy
- Modified mastectomy
- Tylectomy and axillary dissection

Outline the genetic and environmental factors associated with carcinoma of the breast.
Describe the following pathological types of breast cancer, including the biology, natural history, and prognosis of each:

a. Infiltrating ductal carcinoma  
b. Ductal carcinoma in situ (DCIS)  
c. Infiltrating lobular carcinoma  
d. Lobular carcinoma in situ

Outline the diagnostic work-up and the differential diagnosis of various forms of nipple discharge.

Explain the use of tumor, nodes, and metastases (TNM) staging in the treatment of breast cancer.

Summarize the rationale for using a team approach to facilitate the complex discussions and explanation of options for the newly diagnosed breast cancer patient prior to definitive treatment (e.g., team of oncologist, surgeon, plastic surgeon, and radiation therapist).

Explain the role of reduction and augmentation mammoplasty.

Discuss several causes of gynecomastia and outline an appropriate work-up.

Consistently apply basic science principles to common clinical situations

Demonstrate familiarity with various modes of mechanical ventilation, as well as learning techniques to improve gas exchange

Describe the potential complications arising from disorders in electrolytes and in under- or over-resuscitation.

Describe the management of glucose in the diabetic patient.

List etiologies for persistent high NGT output in the postoperative patient, or patient with small bowel obstruction.

Describe the clinical presentation of a patient with hernias, abscesses, biliary disease, bowel obstructions, diverticulitis, hemorrhoids, fissures, and cancer patients.

Draw the anatomy of the gallbladder, triangle of Calot, and hepatic artery.
Describe the blood supply of the colon and rectum.

List at least seven etiologies for small bowel obstructions and ileuses.

List three of four causes of mesenteric ischemia

Describe the risks associated with hernia repair, cholecystectomy, I&D of abscesses.

List the differential diagnosis of the patient with chest pain, low urine output, hypotension, hypertension, and hypoxia.

Describe the important history and data to be taken prior to central line placement.

Describe human arterial and venous anatomy.

Describe basic arterial and venous hemodynamics.

Discuss the anatomy, pathology, and pathophysiology of the arterial wall.

Review and describe the basic clinical manifestations of the following vascular disorders:

- Obstructive arterial disease
- Aneurysmal arterial disease
- Thromboembolic disease—arterial and venous
- Chronic venous insufficiency and lymphatic obstruction
- Portal hypertension
- Congenital vascular disease

Assess patients’ vascular systems using appropriate skills in history-taking and clinical examination.

Discuss basic principles of Doppler ultrasound in preparation for performing bedside arterial and venous Doppler testing.

Outline the principles of care for ischemic limbs.

Describe the natural history of medically treated vascular disease in the following categories:

- Carotid arterial stenosis
- Abdominal aortic aneurysm
- Chronic femoral artery occlusion
Summarize principles for the preoperative assessment and postoperative care of patients undergoing major vascular surgical procedures.

Outline the fundamental elements of non-operative care of the vascular patient, including the role of risk assessment and preventive measures.

Indicate the role of anticoagulant agents, including anti-platelet agents, in the management of patients with vascular disease.

Analyze the role of the endothelium in atherosclerosis, thrombosis, and thrombolysis.

Describe the hemodynamics and pathophysiology of:
- Claudication
- Transient ischemic attack (TIA)
- Stroke
- Mesenteric angina
- Angina pectoris
- Renovascular hypertension
- Arteriovenous (AV) fistula

Explain the concept of critical arterial stenosis.

Differentiate between acute arterial and acute deep venous occlusion.

Discuss the principles of angiography to include the following considerations:
  a. Indications and complications (including contrast-induced renal failure)
  b. Principles and techniques of intra-operative angiography
  c. Principles and techniques of emergency room angiography

Discuss the principles of and contraindications for anticoagulation and thrombolytic therapy.

Describe the surgically correctable causes of hypertension and their diagnostic modalities.

Explain the risk:reward ratios of surgical care for patients with vascular disease.

Discuss the mechanics of action and the therapeutic role of the following pharmacologic types of agents:
- Vasopressors
- Vasodilators
- Adrenergic blocking agents
- Anticoagulants
- Antiplatelet agents
Illustrate the general principles of vascular surgical technique including:

- Vascular control and suturing
- Endarterectomy
- Angioplasty
- Bypass grafting

Determine a plan for assessment of operative risk in these categories:

- Cardiac
- Metabolic
- Pulmonary
- Levels of anesthetic risk
- Renal

Discuss clotting factors and how they interact (coagulation cascade).

Discuss the role of the following factors in maintaining homeostasis in the coagulation pathways:

- Protein S
- Platelet granules
- Protein C
- Endothelial cell
- Platelets
- Antithrombin III

Describe the use of adjunctive measures in the management of patients with vascular disease such as:

- Antibiotics
- Thrombolytic agents
- Antiocoagulants
- Antiplatelet agents

Review the costs associated with providing surgical care to patients with vascular disorders.

Review the anatomy, physiology, and pathology applicable to the general management of trauma patients, including: central nervous system, musculoskeletal system, cardiac system, major vascular structure, intra-abdominal contents including the stomach, small bowel, colon, spleen, pancreas, hepato-biliary system and diaphragm.

Provide the basic knowledge of the evaluation, resuscitation, treatment and long-term effects of psychiatric disorders including substance abuse and post-traumatic stress disorder.
Describe the embryological development of the peritoneal cavity and the position of the abdominal viscera.

Diagram the anatomy of the abdomen including its viscera and anatomic spaces.

Describe the anatomy of the omentum and its role in responding to inflammatory processes.

Describe the alternatives of treatment for the patient with an acute abdomen according to the specific etiology.

Describe the anatomy, clinical presentation and complication of non-operative management of hernias.

Name the most common hernia types and explain their pathophysiology.

Describe the etiology, pathophysiology and therapeutic for inflammatory bowel diseases including ulcerative colitis and Crohn’s disease.

Define a Richter’s hernia and describe the clinical presentation.

Define a sliding hernia and describe its repair.

Differentiate between incarceration and strangulation.

Illustrate the use of diagnostic studies in the work up of complicated hernias.

Describe the surgical techniques for the patient with a hernia, according to its different types.

Promptly identify the potential complications of a hernia repair and treat them appropriately.

Outline the basic techniques of evaluation and resuscitation of trauma patients using the Advanced Trauma Life Support (ATLS) protocol.

Summarize basic critical care management principles.

Discuss wound care management in the emergency department and other settings, including management of drains and tubes inserted into various body cavities.

Explain the characteristics of basic surgical skill, including: sterile technique,
incisions, wound closures, knot tying, handling of tissues and selection/use of operating instruments

Consistently apply basic science principles to common clinical situations.

Refined ability to interpret radiographic findings, EKGs, laboratory data, and intravascular and intra-cranial monitoring systems.

Fundamentals of surgical nutrition including nutrition evaluation as well as routes of access, TPN, eternal nutrition, and nutritional supplements.

**Patient Care**

Establish basic proficiency in providing pre-operative and post-operative care (writes appropriate pre-op and post-op orders for floor patients, handles nursing calls appropriately, and manages most routine post-operative care with minimal intervention by supervisor).

Take an appropriate history to evaluate patients with general surgical issues to include:

a. A complete history of present illness
b. Presence of any co-morbidities
c. A review of social and family history impacting the present problem
d. A complete review of systems

Demonstrate an increasing level of skill in the physical examination of the general surgery patient with a special emphasis in recognition of the surgical abdomen.

Develop a proficiency in evaluation and interpretation of the different diagnostic modalities including: X-Rays, ultrasoundss, CT scans, Contrast studies and MRIs.

Discuss treatment options, risks and potential complications of patients with general surgical issues.

Assist in the performance of general surgical and laparoscopic procedures.

Demonstrate skill in basic surgical techniques, including:

- Knot tying
- Exposure and retraction
- Knowledge of instrumentation
- Incisions
- Closure of incisions
- Handling of graft material including mesh
- Establishing penumoperitoneum
- Handling of laparoscopic instruments
- Handling of the laparoscopic camera

Demonstrate knowledge in steps and conduct during major surgical procedures.

Have clear indications and know when it is appropriate to perform a surgical procedure.

Have an understanding of when it is not appropriate to operate.

Demonstrate knowledge of steps to be taken to have a patient ready for surgery including pre-op workup and medical clearance.

Have a leadership role in the daily management of patient care facilitating in a clear fashion the daily plan of care for the more junior members of the team.

**Professionalism**

The resident should be receptive to feedback on performance, attentive to ethical issues and be involved in end-of-life discussions and decisions.

Understand the importance of honesty in the doctor-patient relationship and other medical interactions.

Treat each patient, regardless of social or other circumstances, with the same degree of respect you would afford to your own family members.

Learn how to participate in discussions and become an effective part of rounds, attending staff conference, etc.

Complete all assigned patient care tasks for which you are responsible or provide complete sign out to the on-call resident.

Maintain a presentable appearance that sets the standard for the hospital this includes but is not limited to adequate hygiene and appropriate dress. Scrubs should be worn only when operating or while on call.

Assist with families of critically injured/ill patients and guidance of families towards or through difficult decisions.

Demonstrate mentoring and positive role-modeling skills.
Take the leading role in directing the weekly educational conferences involving the medical students and junior residents. This includes choosing appropriate peer-reviewed articles and texts and arranging for films and presentations to be ready.

Provide an appropriate orientation and guide all medical students and junior residents as to their roles and responsibilities during the rotation.

Take a role in teaching during rounds illustrating learning points with clinical exam findings, laboratory data and radiographic studies.

**Systems-Based Practice**

Understand, review, and contribute to the refinement of clinical pathways

Understand the cost implications of medical decision-making

Partner with health care management to facilitate resource efficient utilization of the hospital’s resources.

Describe in general terms the benefits of clinical pathway implementation

Develop a cost-effective attitude toward patient management.

Develop an appreciation for the benefits of a multi-disciplinary approach to management of critically ill surgical patients.

Comply with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations regarding patient privacy and confidentiality

**Practice-Based Learning & Improvement**

Demonstrate the ability to:

- Evaluate published literature in critically acclaimed journals and texts
- Apply clinical trials data to patient management
- Participate in academic and clinical discussions

Accept responsibility for all dimensions of routine patient management on the wards

Apply knowledge of scientific data and best practices to the care of the surgical patient
Facilitate learning of medical students and physician assistant students on the team.

Use the LLUMC library and databases on on-line resources to obtain up to date information and review recent advances in the care of the surgical patient.

Demonstrate a consistent pattern of responsible patient care and application of new knowledge to patient management.

Demonstrate a command and facility with on line educational tools.

**Interpersonal & Communication Skills**

Work as effective team members

Cultivate a culture of mutual respect with members of nursing and support staff

Develop patterns of frequent and accurate communication with team members and attending staff

Gain an appreciation for both verbal and non verbal communication from patients and staff

Demonstrate consistent respectful interactions with members of nursing and support staff

Demonstrate consistent, accurate and timely communication with members of the surgical team

Demonstrate sensitivity and thoughtfulness to patients’ concerns and anxieties.

The resident will demonstrate the ability to provide and request appropriate consultation from other medical specialists.