Tanzania Educational Content

ACGME Core Competency-Based Goals and Objectives

1. Patient Care
   A. Goals
   1) Learn to synthesize all available information in order to make appropriate clinical decisions in a resource limited setting.
      i. Understand that some medical resources available may be limited (e.g. limited ICU care, limited advanced imaging, limited laboratory access) and how that impacts decision making
      ii. Understand that patient’s limited resources impact their post-operative course (e.g. no high quality ostomy supplies, tube feeding, etc) and thus will impact operative decision making.
   2) Adapt clinical approach to a resource limited environment where advanced imaging and laboratory investigations might not be immediately accessible.
      i. Perfect history and physical exam as a key part of the evaluation of a patient.
      ii. Understand that radiology access is limited and diagnosis cannot be dependent upon advanced imaging modalities
      iii. Learn to make risk/benefit decisions with the entire operative and post-operative capabilities of the patient and hospital in mind
   3) Understand the importance of generating accurate, thorough medical records that are durable.
   4) Understand appropriate non-operative management of or alternative therapies for the following pathologies. Understand that a non-operative approach to these issues may be limited to the financial, logistical and cultural realities of Tanzania.
      i. Partial small bowel obstruction
      ii. Uncomplicated diverticulitis
      iii. Soft tissue cellulitis
      iv. Intra-abdominal abscess
      v. Gastrointestinal bleeding
      vi. Goiters and thyroid malignancy
      vii. Peptic ulcer disease
      viii. Benign breast pathology
      ix. Colonic volvulus
      x. Obstetrical complications
      xi. Long bone fractures and the mangled extremity
   5) Develop technical skills for common procedures and operations encountered appropriate for the resident’s level of training and taking into account resource limitations. Adjust operative approach to the realities of available resources.
   6) Provide optimal medical care within the setting of the host nation, taking into account local social structure, cultural beliefs and the necessarily brief nature of the rotation.

   B. Objectives
   1) Demonstrate the ability to evaluate an emergency department consultation of a complicated patient that requires an advanced analysis of the history and physical exam as well as available laboratory and diagnostic data, and to present the findings and a thoughtful plan to the attending surgeon.
   2) Describe the indications for and components of nonsurgical management of partial small bowel obstruction.
   3) Describe the indications for nonsurgical management of uncomplicated diverticulitis.
4) Describe appropriate management of uncomplicated cellulitis.
5) Describe the indications for cesarean section in the pregnant patient
6) Be familiar with the operative approach and potential complications
7) Describe the indications for a therapeutic D&C as well as the steps
8) Be familiar with the indications for and operative approach to ovarian and uterine pathology including – salpingooopherectomy and hysterectomy
9) Master technical skills for:
   i. Open and laparoscopic appendectomy, including ruptured appendectomy
   ii. Open and laparoscopic cholecystectomy and CBD exploration
   iii. Lysis of adhesions
   iv. Colostomy
   v. Exploratory laparotomy for abdominal catastrophe
   vi. Debridement of necrotic pancreas
   vii. Debridement of necrotic soft tissue
   viii. Open abdominal techniques/temporary abdominal closure
   ix. Cesarean section
   x. Hysterectomy
   xi. Salpingo-oopherectomy
   xii. Extremity splinting and debridement of open extremity wounds
   xiii. Subtotal and total thyroidectomy
   xiv. Surgical options of peptic ulcer disease – antrectomy, truncal and selective vagotony
   xv. Mastectomy and breast biopsy
   xvi. Lymph node dissection of the axilla
   xvii. Below the knee amputation
   xviii. Above the knee amputation
   xix. Transmetatarsal amputation

2. Medical Knowledge
   A. Goals
   1) Understand the pathophysiology and clinical presentation of the following emergency/urgent surgical problems and their management in a resource limited environment. Additionally understand the social and cultural influences that will impact surgical decision making.
      i. Appendicitis (non-ruptured versus ruptured)
      ii. Bowel obstruction (partial versus complete)
      iii. Cholecystitis with or without choledocholithiasis
      iv. Ascending cholangitis
      v. Colonic diverticulitis (uncomplicated versus ruptured)
      vi. Soft tissue infection (uncomplicated versus necrotizing)
      vii. Gastrointestinal hemorrhage
      viii. Pancreatitis (uncomplicated versus complicated)
      ix. Intra-abdominal abscess
      x. Ischemic bowel disease
      xi. Colonic volvulus
      xii. Other abdominal catastrophe
      xiii. Simple and complex hernias
      xiv. Esophageal perforations
      xv. Goiters and thyroid malignancy
xvi. Peptic ulcer disease
xvii. Ovarian malignancy, benign ovarian pathology
xviii. Uterine benign and malignant pathology
xix. Lipoma and soft tissue benign and malignant sarcomas
xx. Benign and malignant breast pathology
xxi. Abdominal compartment syndrome
xxii. Iatrogenic bowel perforation
xxiii. Post-partum hemorrhage
xxiv. Post-partum infectious complications
xxv. Placental abruption
xxvi. Obstructed labor
xxvii. Ovarian and endometrial benign and malignant pathology
xxviii. Blunt abdominal and thoracic trauma
xxix. Penetrating abdominal and thoracic trauma
xxx. Long bone fractures
xxxi. Initial management of the mangled extremity

2) Understand the appropriate use of antibiotics in the following emergency/urgent surgical problems as well as understand that reliable, broad spectrum antibiotic access may not available and thus medical management may not be an option.
   i. Appendicitis
   ii. Cholecystitis with or without choledocholithiasis
   iii. Ascending cholangitis
   iv. Colonic diverticulitis (uncomplicated versus ruptured)
   v. Soft tissue infection (uncomplicated versus necrotizing)
   vi. Pancreatitis (uncomplicated versus complicated)
   vii. Abdominal catastrophe
viii. Post-partum infectious complications
ix. Open fractures

3) Understand the indications for operative intervention in the following pathology with consideration of the limited operative and post-operative resources available. Learn to adjust medical decision making to reflect these realities.
   i. Appendicitis (non-ruptured versus ruptured)
   ii. Bowel obstruction (partial versus complete)
   iii. Cholecystitis with or without choledocholithiasis
   iv. Ascending cholangitis
   v. Colonic diverticulitis (uncomplicated versus ruptured)
   vi. Soft tissue infection (uncomplicated versus necrotizing)
   vii. Gastrointestinal hemorrhage
   viii. Pancreatitis (uncomplicated versus complicated)
   ix. Intra-abdominal abscess
   x. Ischemic bowel disease
   xi. Colonic volvulus
   xii. Other abdominal catastrophe
   xiii. Simple and complex hernias
   xiv. Esophageal perforations
   xv. Goiters and thyroid malignancy
   xvi. Peptic ulcer disease
xvii. Ovarian malignancy, benign ovarian pathology
xviii. Uterine benign and malignant pathology
xix. Lipoma and soft tissue benign and malignant sarcomas
xx. Benign and malignant breast pathology
xxi. Abdominal compartment syndrome
xxii. Iatrogenic bowel perforation
xxiii. Post-partum hemorrhage
xxiv. Post-partum infectious complications
xxv. Placental abruption
xxvi. Obstructed labor
xxvii. Blunt abdominal and thoracic trauma
xxviii. Penetrating abdominal and thoracic trauma
xxix. Long bone fractures
xxx. Initial management of the mangled extremity

4) Understand the general and advanced principles of wound care in a resource limited environment and how the lack of consistent nutrition, clean environments and long term follow-up may impact these plans.

5) Understand the principles of pre and postoperative feeding/nutrition and how that is limited by patient and facility resources. Adjust decision making to reflect these realities.

6) Understand how to conduct clinical research in a resource-limited hospital in another country

B. Objectives
1) Describe symptoms and physical exam findings consistent with acute appendicitis.
   i. Name laboratory tests useful in the evaluation of acute appendicitis and describe expected results in patients who have the disease.
   ii. Name radiographic studies useful in the evaluation of acute appendicitis and describe expected findings in patients who have the disease. Describe indications for radiographic testing in the setting of resource limitations.
   iii. List the differential diagnosis of acute appendicitis

2) List the etiologies of small and large bowel obstruction
   i. Describe the symptoms and physical exam findings consistent with large bowel obstruction; explain the differing presentations as related to specific etiologies.
   ii. Name the radiographic studies used to evaluate small bowel obstructions and the expected findings.
   iii. Name the radiographic studies used to evaluate large bowel obstruction and describe the expected findings in patients who have this problem; explain the differing findings as related to the specific etiologies.
   iv. Name laboratory tests useful in the evaluation and management of the fluid shifts associated with bowel obstruction; explain the expected results in patients presenting with early/partial versus complete obstruction

3) Define biliary colic, acute cholecystitis, chronic cholecystitis and ascending cholangitis.
   i. Describe the pathogenesis of cholelithiasis as it relates to biliary disease
   ii. Describe the symptoms and physical exam findings typical of biliary colic, acute cholecystitis, chronic cholecystitis and ascending cholangitis.
   iii. Name the radiographic studies useful in the evaluation of gallbladder and biliary tract disease and describe the expected findings in uncomplicated cholelithiasis versus cholecystitis.
   iv. Name the laboratory tests useful in the evaluation of gallbladder and biliary tract disease. Explain the expected results in patients with cholecystitis and ascending cholangitis.
4) Describe the etiology and usual anatomic distribution of typical colonic diverticulitis.
   i. Define uncomplicated and complicated diverticulitis
   ii. Define the symptoms and physical exam findings in a patient who presents with uncomplicated versus complicated diverticulitis.
   iii. Name the radiographic studies useful in the evaluation of diverticulitis and describe the expected findings in patients who have uncomplicated versus complicated disease.
   iv. Name the laboratory tests useful in the evaluation of diverticulitis and explain the expected results in a patient who presents with this problem.

5) Define cellulitis and list the most common pathogens in uncomplicated and complicated cases
   i. Describe the symptoms and physical exam findings in a patient who presents with an uncomplicated case of cellulitis versus the findings that indicate the likelihood of complicated (necrotizing) infections.
   ii. Define abscess and list the most common pathogens in cases involving the torso, head, neck, extremities and peri-rectal area.
   iii. Describe the symptoms and physical exam findings in a patient who presents with a perirectal abscess.
   iv. Describe the possible complications of a complicated or untreated perirectal abscess.
   v. Name radiographic studies that may help differentiate between equivocal cases of abscess versus cellulitis and described expected findings of each.
   vi. Name the laboratory tests useful in the workup of cellulitis and abscess.
   vii. Describe the indications for aggressive, lifesaving exploration and debridement of spreading necrotizing soft tissue infections and the criteria for adequate debridement.

6) List the most common etiologies of upper gastrointestinal hemorrhage versus lower gastrointestinal hemorrhage
   i. Describe the history and physical exam findings consistent with upper gastrointestinal hemorrhage versus lower gastrointestinal hemorrhage.
   ii. Name the radiographic and endoscopic tests useful in the workup of upper gastrointestinal hemorrhage versus lower gastrointestinal hemorrhage.
   iii. Name the laboratory and radiologic tests useful in the evaluation of gastrointestinal hemorrhage.
   iv. Describe the specific indications for and appropriate peptic ulcer prophylaxis in routine postop patients.
   v. Describe the surgical and nonsurgical management of acute variceal hemorrhage.
   vi. Describe the specific indications for operative intervention of upper and lower gastrointestinal hemorrhage.

7) List the most common etiologies of pancreatitis.
   i. Explain the difference between acute, chronic, and necrotizing pancreatitis.
   ii. Define and list Ranson’s criteria.
   iii. List the potential acute, severe and long-term, chronic sequelae of pancreatitis.
   iv. Describe the history and physical exam findings consistent with acute versus chronic pancreatitis versus necrotizing pancreatitis.
   v. Name the radiographic studies helpful in the diagnosis and characterization of pancreatitis, and describe the expected findings in acute versus chronic versus necrotic disease.
   vi. Name the laboratory tests helpful in the diagnosis and management of pancreatitis
   vii. Describe the specific indications for surgical debridement of necrotizing pancreatitis.

8) Describe appropriate perioperative antibiotic coverage for acute/uncomplicated versus perforated/ruptured appendicitis.
i. Describe appropriate antibiotic prophylaxis for patients undergoing operation for bowel obstruction.
ii. Describe appropriate perioperative antibiotic coverage for acute cholecystitis.
iii. Describe appropriate antibiotic coverage for uncomplicated acute diverticulitis.
iv. Describe appropriate antibiotic coverage for patients with “uncomplicated” cellulitis; describe appropriate alternatives for patients who have penicillin allergies or MRSA.
v. Describe appropriate perioperative antibiotic coverage for abscess of the torso, head/neck, or extremities.
vi. Describe appropriate perioperative antibiotic coverage for perirectal abscess.

9) With respect to wound closures, define and explain the indications for:
   i. primary closure
   ii. delayed primary closure
   iii. healing by secondary intention
   iv. List (and explain the rationale for) the indications for nonclosure of surgical incisions (“leaving the wound open”).
   v. Describe 3 forms of open wound dressing changes, including the Wound Vac system, and explain the rationale for effectiveness of each.
   vi. Describe the signs and physical exam findings of postoperative wound infection.

10) List the indications for placement of enteral feeding tubes (gastrostomy, jejunostomy, nasoduodenal).
   i. Name at least 3 serious or life-threatening complications related to enteral feeding tubes.
   ii. Describe principles of postoperative feeding/nutrition in patients status post:
       i. appendectomy
       ii. relief of bowel obstruction
       iii. cholecystectomy
       iv. small bowel or colon resection
       v. abdominal catastrophe

11) Describe the indications for the use of the “open abdomen technique” in the management of the abdominal catastrophe, including peritonitis, necrotizing pancreatitis, and abdominal compartment syndrome.

12) Describe the presentation, pathophysiology and initial management of common obstetrical complications
   i. Describe the management of obstructed labor and indications for caesarian section
   ii. Describe the management options for postpartum hemorrhage and placental abruption
   iii. Describe the management of puerperal fever and mastitis

13) Describe the treatment algorithm for management of a complex extremity wound.
   i. Describe splinting options for upper and lower extremity fractures.
   ii. Describe the indications and approach to operative debridement and external fixation.
   iii. Discuss the indications for amputation and approach to pre-operative decision making.

14) Describe the presentation, pathophysiology and initial management of ovarian and uterine malignancy as well as benign conditions. Describe indications for intervention.
   i. Describe the approach to salpingo-oophorectomy.
   ii. Describe the approach to hysterectomy
   iii. Describe the appropriate post-surgical care for malignancy gynecologic cancers

15) Describe the presentation, pathophysiology and management of benign and malignant thyroid masses.
    Describe the initial management in a resource limited setting.
    i. Describe the operative approaches to thyroid lobectomy and total thyroidectomy.
    ii. Describe the management options following total thyroidectomy in a resource limited setting.
16) Describe the presentation, pathophysiology and initial management breast malignancy as well as benign conditions. Describe indications for intervention and how lack of ancillary oncologic services may impact approach.

17) Describe the presentation, pathophysiology and initial management of peptic ulcer disease and the potential acute complications. Describe the treatment algorithm in the resource limited setting where proton pump inhibitors and Helicobacter pylori eradication may not be an option.
   i. Describe the operative approach to peptic ulcer disease and the potential complications of the different approaches.

18) Describe the acute resuscitation and management of a traumatically injured patient keeping in mind that ICU care and blood banking is likely not available in a resource limited setting.

19) Engage in at least 1 clinical project while overseas and complete this project upon returning home. This should be a collaborative endeavor with local residents if possible.

3. Practice-based learning
   A. Goals
      1) Understand the importance of public health in the provision of surgical care and the overall health of our patients.
         i. Generate at least one public health intervention to improve the overall health of our host community.
      2) Understand the logistics inherent in international health and the importance of planning for future missions and long term cooperation. Take an active role in planning for the mission.
      3) Develop an attitude of responsibility for the patients with the goal of continuous improvement in practice and management style.
      4) Understand the importance of critically reading and discussing medical literature pertinent to patients encountered. Adjust interpretation of this literature to the realities of medical care in Tanzania.
      5) Participate in the educational opportunities provided by the local surgical providers and staff, taking into account their expertise in managing surgical issues. Aid in the education of local surgical trainees as appropriate.
      6) Work to build the surgical capacity of the host institution and further the clinical and research capabilities of the local surgical staff.
      7) Apply knowledge and expertise of the local practitioners into the resident’s skill set that can be carried back to the stateside program.

   B. Objectives
      1) Critically discuss performance with respect to care of patients and progress made during rotation with Chief of Service or designee at mid-rotation meeting.
      2) In conjunction with local health care providers, develop a public health educational curriculum to address ongoing needs in the community.

4. Interpersonal and Communication skills
   A. Goals
      1) Perfect the ability to respectfully and clearly communicate with other healthcare professionals.
      2) Perfect the ability to present patients to surgical staff in an organized and precise manner.
      3) Perfect the ability to function not only as a member of a team but also as a team leader.
      4) Perfect the ability to communicate effectively with patients and their families in a setting where language and cultural barriers could be an issue.
      5) Develop an understanding of local traditions and how those may guide medical decisions.
B. Objectives
1) Consistently answer nursing and other resident questions clearly and effectively.
2) Consistently communicate patient assessments and plans to other residents or attending surgeon.
3) Present clinic patients to the attending surgeon efficiently to facilitate clinic flow.
4) Consistently respond to consultation requests. Perfect skill of explaining results of evaluations and recommendations for treatment to patients and their families (patient education).
5) Demonstrate effective teaching of other residents and students
6) Demonstrate the ability to educate the community with regards to basic sanitation and public health concepts, taking advantage of the “down time” while patients are awaiting surgical consultation.

5. Professionalism
A. Goals
1) Learn to live and work with our international partners in a foreign culture.
2) Demonstrate respect and compassion for patients and staff.
3) Develop open-mindedness regarding alternative treatments and local healers.
4) Develop an attitude of responsibility for patient care requests by other residents and attending providers.
5) Develop skill in multitasking and problem solving.
6) Develop respect for and understanding of the local culture.
7) Develop an understanding that local resource limitations may limit our ability to successfully treat patients with otherwise curable disease.
8) Make decisions regarding provision of care when “curable” disease may results in morbidity or mortality due to lack or resources.

B. Objectives
1) Be aware of and sensitive to the fact that we are guests at this hospital and that the resource limitations inherent in a developing country may limit provision of medical care.
2) Use appropriate speech and tone of voice when speaking to patients, families, and all other healthcare professionals. Utilize interpreters appropriately, where necessary.
3) Allow others the chance to speak, and listen attentively when being spoken to.
4) Demonstrate a conscientious approach to patient care by minimizing delay of care and minimizing passage of incomplete tasks to fellow residents.
5) Manage time and personnel effectively
6) Know when and where to go for help with problems

6. Systems-based Practice
A. Goals
1) Understand the importance of providing basic public health and sanitation education to patients awaiting surgical evaluation. Take an active role in this education.
2) Understand the importance of supporting medical and ancillary services in the complete and efficient care of the patient.
3) Develop a cost-effective attitude toward patient management with resource limitations in mind.
4) Develop and appreciation for the patients’ and families’ interest and convenience in care management plans. Understand that this may vary from community to community depending on local societal beliefs and structure.

B. Objectives
1) Facilitate the public health and sanitation education of the community. Describe indications for medical consultation in the pre- and post-operative periods.

2) As pertinent for each individual patient, facilitate daily communication with ancillary services, as available.

3) Take a leadership role to fill in if the above listed ancillary services are not available.