Preamble

The Acute Care Surgery Service at St. Boniface General Hospital is intended to provide General Surgery residents with the opportunity for concentrated exposure to acute care general surgery cases beginning with presentation in the emergency department. The rotation emphasizes clinical assessment, physiologic stabilization, diagnostic evaluation and prioritized management along a continuum of care beginning in the emergency department and culminating in hospital discharge or transfer.

The Acute Care Surgery Service experience offers phenomenal exposure to the acute clinical problems commonly seen by the practicing general surgeon. Each new case provides the opportunity to challenge ability and to further competency and prompts the resident to develop a well-informed, evidence-based and systematic approach to common serious conditions.

General Objectives

Upon completion of the Acute Care Surgery rotation, the General Surgery resident is expected to acquire the knowledge (cognitive), clinical and technical skills (psychomotor) and attitudes (affective) essential to the CanMEDS roles/competencies pertinent to the Acute Care Surgery Service rotation, including gender-related and ethnic perspectives. The resident is advised to review the Learning Objectives for General Surgery Residents on General Surgery Rotations in conjunction with these rotation-specific objectives.

The junior resident should strive to become competent as a team leader in the management of the acute care cases. The senior resident should aim to demonstrate complete competence as a consultant in General Surgery, including authoritative team leadership and the provision of thoughtful, appropriate and complete management of acute care surgical cases. Furthermore, he/she is expected to develop and demonstrate the ability to organize and manage this complex and active Service such that quality patient care is consistently maintained. The task demands professionalism in every regard. Finally, the senior resident is charged with contributing to the pedagogical experience of the more junior trainees by initiating discussions around appropriate clinical cases on a regular basis.

Specific Objectives

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will have acquired the following competencies and will function as:

Medical Expert

- Establish and maintain clinical knowledge, skills and attitudes appropriate to the Acute Care Surgery rotation
  - Apply knowledge of the clinical, socio-behavioral and fundamental biomedical sciences relevant to the Acute Care Surgery rotation

The resident in General Surgery is required to attain sufficient knowledge as follows:

Acute Surgical Problems

- Principles of early assessment and investigation in the acute abdomen, including:
  - Conditions associated with abdominal pain, including:
    - Acute appendicitis
    - Cholecystitis/biliary colic/choledocholithiasis/cholangitis
    - Pancreatitis
    - Peptic ulcer disease (with or without perforation)
    - Gastroesophageal reflux
    - Gastritis/duodenitis
    - Diverticulitis
    - Inflammatory bowel disease
    - Enterocolitis
    - Small intestinal obstruction
    - Colonic obstruction
    - Splenomegaly
    - Mesenteric ischemia
    - Leaking/ruptured abdominal aortic aneurysm
  - Gynecologic conditions, including:
    - Ectopic pregnancy
    - Ovarian cyst (torsion; hemorrhage; rupture)
    - Tubo-ovarian abscess
    - Salpingitis
    - Endometritis
  - Genito-urinary conditions, including:
    - Urosepsis
- Pyelonephritis
- Ureterolithiasis
- Testicular torsion

- Common non-surgical conditions that can present with abdominal pain, including:
  - Myocardial infarction
  - Pneumonia
  - Pleuritis
  - Hepatitis
  - Gastroenteritis
  - Mesenteric adenitis
  - Sickle cell crisis
  - Diabetic ketoacidosis
  - Herpes zoster
  - Nerve root compression
  - Myofascial syndrome

- Conditions causing abdominal pain in the immune-suppressed patient, including:
  - Neutropenic enterocolitis
  - CMV enterocolitis
  - Acute graft rejection

- Investigations, including:
  - Blood tests
  - Diagnostic imaging
  - Endoscopy/laparoscopy

- Early management of patients with acute abdominal pain, including:
  - Operative versus nonoperative approach

- Presentation, pathophysiology, principles of assessment, diagnostic strategy, specific management, complications of disease and intervention and expected outcomes of common surgical emergencies, including:
  - Perforations of the upper gastrointestinal tract, including:
    - Esophageal perforation
    - Perforated peptic ulcer
    - Perforated gastric lesions
  - Gastrointestinal hemorrhage, including:
    - Acute non-variceal upper gastrointestinal bleeding
    - Acute variceal upper gastrointestinal bleeding
    - Hemobilia
    - Aorto-enteric fistula
    - Acute lower gastrointestinal bleeding
  - Pancreaticobiliary emergencies, including:
    - Biliary colic/acute cholecystitis/acalculous cholecystitis
    - The acutely jaundiced patient
    - Choledocholithiasis/acute cholangitis
    - Acute pancreatitis
  - Hepatic emergencies, including:
    - Abscess
    - Infected cyst
  - Small intestinal emergencies, including:
    - Obstruction
    - Mesenteric ischemia
    - Inflammatory conditions, including:
      - Crohn’s disease
      - Radiation enteritis
    - Meckel's diverticulum
    - Bleeding
  - Acute appendicitis/perforation/phlegmon
  - Colorectal emergencies, including:
    - Colonic obstruction
    - Intestinal pseudo-obstruction
    - Acute colorectal bleeding
    - Colonic perforation
    - Volvulus, including:
      - Cecal volvulus
      - Sigmoid volvulus
    - Acute diverticulitis
    - Emergencies related to colorectal malignancy
    - Emergencies related to inflammatory bowel disease, including:
      - Ulcerative colitis
      - Crohn’s disease
    - Emergencies related to pseudomembranous colitis
    - Ischemic colitis
• Anorectal emergencies, including:
  ➢ Ischiorectal/perianal abscess
  ➢ Acute anal fissure
  ➢ Acute hemorrhoid emergencies, including:
    ✓ Thrombosis
    ✓ Prolapse/gangrene
    ✓ Bleeding
  ➢ Pilonidal abscess
  ➢ Foreign body
  ➢ Fulminating sepsis/fasciitis/myonecrosis
• Acute conditions related to hernias of the abdominal wall, groin (inguinal/femoral) and obturator foramen, including:
  ➢ Incarceration
  ➢ Strangulation
  ➢ Obstruction
• Soft tissue infection, including:
  ➢ Cellulitis
  ➢ Abscess
  ➢ Fulminating sepsis, including:
    ✓ Fasciitis
    ✓ Myonecrosis
    ✓ Fournier’s gangrene

With respect to the above outline of cognitive objectives:

• The PGY-1 resident and the junior resident will be able to outline the initial management of the listed conditions
• The senior/chief resident will be able to describe the listed conditions beyond initial management, including operative procedures, perioperative considerations, complications, expected outcomes and follow-up
• Perform a complete and appropriate assessment of the acute care patient
  ➢ Elicit a history that is relevant, concise and accurate
  ➢ Perform a focused physical examination that is relevant and accurate
  ➢ Select medically appropriate investigations in a resource-effective and ethical manner
  ➢ Demonstrate effective clinical problem solving and judgment to address the acute care problems, including interpreting available data and integrating information to generate differential diagnoses and management plans
• Use preventive and therapeutic interventions effectively
  ➢ Implement an effective and prioritized management plan for the acute care patient, including appropriate and expeditious patient disposition
  ➢ Triage and organize care of multiple acute care patients simultaneously
  ➢ Demonstrate effective, appropriate and timely application of therapeutic interventions relevant to the Acute Care Surgery Service rotation
  ➢ Ensure appropriate informed consent is obtained for therapies

The PGY-1 resident and the junior resident will be able to:
• Perform many of the above clinical skills
• Initiate well thought-out and appropriate management strategies; will require corroboration or modification by a more senior individual

The senior/chief resident will be able to:
• Perform the above clinical skills
• Formulate management strategies completely
• Coordinate team members and consultants in the development, documentation and execution of clear and integrated management plans
• Demonstrate proficient and appropriate use of procedural skills
  ➢ Demonstrate effective, appropriate and timely performance of diagnostic procedures relevant to the Acute Care Surgery Service rotation
  ➢ Demonstrate effective, appropriate and timely performance of therapeutic procedures relevant to the Acute Care Surgery Service rotation
  ➢ Ensure appropriate informed consent is obtained for procedures
  ➢ Appropriately document and disseminate information related to procedures performed and their outcomes
  ➢ Ensure adequate follow-up is arranged for procedures performed
  ➢ Compile and maintain an accurate and complete electronic data base of all operative procedures performed on the Acute Care Surgery Service rotation

Having completed the Acute Care Surgery Service rotation, the General Surgery resident will be able to demonstrate technical competence for the following procedures:

(Designation is listed as to expectation of Surgeon (S) or Assistant (A) for each procedure and for each level of training)
<table>
<thead>
<tr>
<th>Operative Procedures</th>
<th>PGY 1</th>
<th>Junior</th>
<th>Senior/Chief</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Assessment and Resuscitation Procedures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arterial puncture</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Venipuncture</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Venous cutdown</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Insertion/removal of central venous catheter</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Insertion/removal of venous access reservoir (Portacath)</td>
<td>A/S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Endotracheal intubation</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Insertion/removal of peritoneal dialysis catheter</td>
<td>A/S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Urinary catheter insertion</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Suprapubic catheter insertion</td>
<td>A</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Nasogastric/orogastric tube insertion</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Acute Care Procedures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damage control laparotomy</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Integumentary System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incision/drainage of subcutaneous abscess</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Foreign body removal</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Breast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incision/drainage of breast abscess</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Endoscopic Procedures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esophagogastroduodenoscopy</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Flexible sigmoidoscopy</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Rigid sigmoidoscopy</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Endoscopic injection therapy</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Endoscopic banding for varices</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Percutaneous endoscopic gastrostomy (PEG)</td>
<td>A/S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Hemorrhoid banding</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Endoscopic thermal techniques for bleeding</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Endoscopic detorsion of sigmoid volvulus</td>
<td>NA</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Diagnostic laparoscopy</td>
<td>A</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Gastrointestinal Procedures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partial gastric resection with Billroth I/Billroth II/Roux-en-y reconstruction for bleeding/perforation obstruction</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Open gastroenterotomy</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic gastroenterotomy</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Total gastrectomy for bleeding</td>
<td>A</td>
<td>A</td>
<td>S</td>
</tr>
<tr>
<td>Gastrotomy and oversewing of bleeding gastric ulcer</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Duodenotomy/pylorotomy and oversewing of bleeding duodenal ulcer</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Truncal vagotomy for bleeding peptic ulcer</td>
<td>A</td>
<td>A</td>
<td>A/S</td>
</tr>
<tr>
<td>Open omental patch of perforated peptic ulcer</td>
<td>A</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic omental patch of perforated peptic ulcer</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Open surgical gastrostomy techniques</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic surgical gastrostomy techniques</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Small Intestinal Procedures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open enterostomy (feeding/loop)</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic enterostomy</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Laparotomy and enterolysis for intestinal obstruction</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Open small intestinal resection/anastomosis</td>
<td>A</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic small intestinal resection/anastomosis</td>
<td>A</td>
<td>A/S</td>
<td>A/S</td>
</tr>
<tr>
<td>Open resection of Meckel’s diverticulum</td>
<td>A</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic resection of Meckel’s diverticulum</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Open enteroanastomosis</td>
<td>A</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic enteroanastomosis</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Colon and Rectal Procedures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open appendectomy</td>
<td>A/S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic appendectomy</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Open colostomy (end/loop)</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
<tr>
<td>Laparoscopic colostomy</td>
<td>A</td>
<td>A</td>
<td>A/S</td>
</tr>
<tr>
<td>Open colonic resection (segmental/subtotal) with anastomosis or ostomy</td>
<td>A</td>
<td>A/S</td>
<td>S</td>
</tr>
</tbody>
</table>
Laparoscopic colonic resection | A | A/S | S
Sigmoid resection with Hartmann for perforated diverticulitis | A | A/S | S

**Anorectal Procedures**

- Excision of thrombosed hemorrhoid | S | S | S
- Hemorrhoidectomy | A | A/S | S
- Hemorrhoid banding | S | S | S
- Hemorrhoid injection | S | S | S
- Lateral internal sphincterotomy for anal fissure | A | A/S | S
- Incision/drainage of perianal abscess | S | S | S
- Incision/drainage of ischiorectal abscess | S | S | S
- Incision/drainage of pilonidal abscess | S | S | S
- Extensive perineal debridement for sepsis | A/S | S | S

**Liver Procedures**

- Open decompression/management of liver abscess/cyst | A | A/S | S

**Gallbladder and Biliary Tract Procedures**

- Laparoscopic cholecystectomy and cholangiography | A | S | S
- Open cholecystectomy and cholangiography | A | S | S
- Open cholecystostomy | A | S | S
- Laparoscopic cholecystostomy | A | S | S
- Open common bile duct exploration | A | A | S
- Laparoscopic common bile duct exploration | A | A | A/S
- Biliary-intestinal anastomosis | A | A | S

**Pancreatic Procedures**

- Drainage of pancreatic abscess | A | A/S | S
- Pancreatic necrosectomy for necrotizing pancreatitis | A | A/S | S

**Hernia and Abdominal Wall Procedures**

- Emergency repair of incarcerated/strangulated inguinal hernia using Cooper’s ligament (McVay) technique | A | A/S | S
- Emergency repair of incarcerated/strangulated femoral hernia using Cooper’s ligament (McVay) technique | A | A/S | S
- Emergency repair of incarcerated/strangulated ventral hernia | A | A/S | S
- Emergency repair of incarcerated/strangulated umbilical hernia | A/S | S | A/S
- Emergency repair of obturator hernia | A | A/S | S
- Emergency repair of fascial dehiscence/evisceration | A | S | S
- Incision/drainage of abdominal wall abscess | S | S | S

**Communicator**

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will be able to:

- **Seek appropriate consultation from other health professionals**
  - Demonstrate insight into his/her own limitations of expertise by self-assessment
  - Demonstrate effective, appropriate and timely consultation of another health professional as needed for optimal care of the acute care surgical patient
  - Arrange appropriate follow-up care services for the acute care surgical patient

- **Develop rapport, trust and ethical therapeutic relationships with patients and families**
  - Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty and empathy
  - Respect patient confidentiality, privacy and autonomy
  - Listen effectively

- **Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues and other professionals**
  - Seek out and synthesize relevant information from other sources such as the acute care surgical patient’s family, caregivers and other professionals

- **Accurately convey relevant information and explanations to patients and families, colleagues and other professionals**
  - Deliver information to the acute care surgical patient and family, colleagues and other professionals in a humane and understandable manner

- **Convey effective oral and written information**
  - Maintain clear, accurate, appropriate and timely records of clinical encounters and operative procedures involving the acute care surgical patients
• Maintain an accurate, complete and up-to-date electronic database (log) of operative procedures performed during the Acute Care Surgery Service rotation
• Effectively present verbal reports of clinical encounters and medical information during the Acute Care Surgery Service rotation

**Collaborator**

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will be able to:

- **Participate effectively and appropriately in an interprofessional healthcare team**
  - Recognize and respect the diversity of roles, responsibilities and competences of other professionals in the management of the acute care surgical patient
  - Work with others to assess, plan, provide and integrate care of the acute care surgical patient
  - Demonstrate leadership on the Acute Care Surgery Service in general and in the acute care surgery team in particular

**Manager**

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will be able to:

- **Manage his/her professional and personal activities effectively**
  - Set priorities and manage time to balance professional responsibilities, outside activities and personal life
  - Employ information technology effectively (e.g., electronic surgical procedure database)
- **Demonstrate an understanding of cost-effectiveness in patient management**
  - Utilize hospital resources wisely when managing trauma/acute care surgical patients
- **Serve in leadership roles, as appropriate**
  - Participate effectively at teaching rounds and other meetings
  - Lead the acute care surgery team effectively and efficiently

**Health Advocate**

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will be able to:

- **Respond to the needs of the acute care surgical patient**
  - Identify the health needs of an individual patient
  - Identify opportunities for advocacy, health promotion and disease prevention (e.g., promotion of dietary modification in diverticular disease and colorectal cancer screening for prevention)

**Scholar**

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will be able to:

- **Maintain and enhance professional activities through ongoing learning**
  - Pose an appropriate learning question
  - Access and interpret the relevant evidence
  - Integrate new learning into development as a general surgeon
- **Critically evaluate medical information and its sources and apply this appropriately to clinical decisions**
- **Facilitate the learning of students and residents**
  - Demonstrate an effective presentation while assigned to the Acute Care Surgery Service
  - Provide effective feedback to faculty, residents and students

**Professional**

At the completion of the Acute Care Surgery Service rotation, the General Surgery resident will be able to:

- **Demonstrate a commitment to patients through ethical practice**
  - Exhibit appropriate professional behaviors, including honesty, integrity, commitment, compassion, respect and altruism
  - Appropriately manage conflicts of interest
  - Recognize the principles and limits of patient confidentiality
  - Maintain appropriate relations with patients
- **Demonstrate a commitment to physician health**
  - Balance personal and professional priorities
  - Strive to heighten personal and professional awareness and insight