

## MACS Patient Selection Criteria

The objective is to screen, on a daily basis, the Acute Care Surgical service “touches” at your hospital to identify patients who meet criteria for further data entry.

The specific patient diseases/conditions that we are interested in capturing for emergent general surgery (EGS) are:

- 1. Acute Appendicitis**
- 2. Acute Gallbladder Disease**
  - a. Acute Cholecystitis
  - b. Choledocholithiasis
  - c. Cholangitis
  - d. Gallstone Pancreatitis
- 3. Small Bowel Obstruction**
  - a. Adhesive
  - b. Hernia
  - c. Malignancy/Mass/Stricture/Other
- 4. Emergent Exploratory Laparotomy** (Refer to the ex-lap algorithm under the Diseases or Conditions section below for inclusion/exclusion criteria.)

The daily census for patients admitted to the Acute Care Surgery Service or seen as a consult will have to be screened. There may be other sources to accomplish this screening such as IT and we are interested in learning about these sources from you. From this census, a list can be compiled of patients with the aforementioned diseases/conditions.

The first level of data entry involves capture and entry of the patient into the MACS Qualtrics database. All patients with the identified diseases/conditions will have data entered regardless of whether or not they received an operation during admission/ED visit. The second level of data entry takes place if an existing MACS patient returns to the hospital (ED or admission) or has outcome events identified within the 30-day post-operative time frame if the patient had surgery, or within 30 days from discharge for the non-operative patients.

You will see that we are capturing diagnostic, interventional, and therapeutic data that extend beyond what is typically captured for MSQC patients. This includes radiologic studies, interventional procedures, types of hernia repair, and non-operative details.

We will collect data on hernia repairs for patients who receive an operation for any of the indicated diseases/conditions who have a concomitant hernia present that is repaired during their operation.

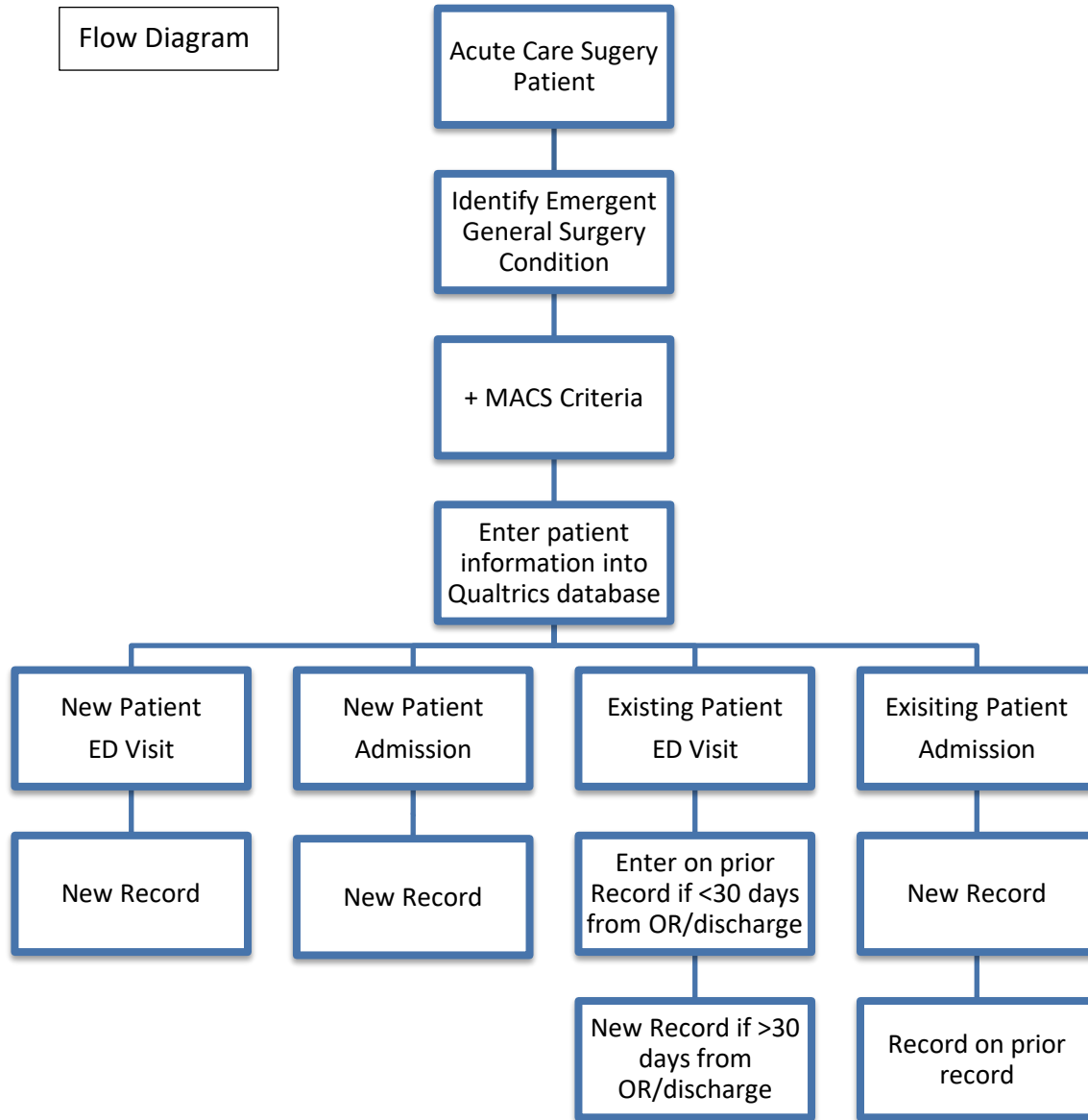
Return visits to the ED that do not result in an inpatient admission are recorded as a complication/outcome on the prior MACS Qualtrics data entry for the patient. This can occur for up to 30-days after surgery, or 30 days following discharge from the hospital for non-operative patients.

Readmissions to the hospital are recorded as a new patient entry in the MACS Qualtrics database if both of the following exist:

- readmission to your facility with admit or consult to surgery service
- readmission is related to the surgical problem from the prior episode (index admit).

Please record the date of readmission on the prior patient record in the MACS Qualtrics database to assist in episode linkage.

Flow Diagram



## Diseases or Conditions based on ICD-10 CM Diagnosis Codes or Clinical Criteria

### 1. Acute Appendicitis

|         |  |
|---------|--|
| K35.20  | Acute appendicitis w generalized peritonitis, without abscess                |
| K35.21  | Acute appendicitis w generalized peritonitis, with abscess                   |
| K35.30  | Acute appendicitis w localized peritonitis, without perforation or gangrene  |
| K35.31  | Acute appendicitis w localized peritonitis and gangrene, without perforation |
| K35.32  | Acute appendicitis w perforation and localized peritonitis, without abscess  |
| K35.33  | Acute appendicitis w perforation and localized peritonitis, with abscess     |
| K35.80  | Unspecified acute appendicitis   |
| K35.890 | Other acute appendicitis without perforation or gangrene                     |
| K35.891 | Other acute appendicitis without perforation, with gangrene                  |
| K36     | Other appendicitis   |
| K37     | Unspecified appendicitis   |
|         |  |

### 2. Acute Gallbladder Disease

Cholecystitis, Choledocholithiasis

|        |   |
|--------|---|
| K80.00 | Calculus of gallbladder w acute cholecystitis without obstruction             |
| K80.01 | Calculus of gallbladder w acute cholecystitis with obstruction                |
| K80.10 | Calculus of gallbladder w chronic cholecystitis without obstruction           |
| K80.11 | Calculus of gallbladder w chronic cholecystitis with obstruction              |
| K80.12 | Calculus of gallbladder w acute and chronic cholecystitis without obstruction |
| K80.13 | Calculus of gallbladder w acute and chronic cholecystitis with obstruction    |
| K80.18 | Calculus of gallbladder w other cholecystitis without obstruction             |
| K80.19 | Calculus of gallbladder w other cholecystitis with obstruction                |
| K80.21 | Calculus of gallbladder without cholecystitis with obstruction                |
| K80.30 | Calculus of bile duct with cholangitis, unspecified, without obstruction      |
| K80.31 | Calculus of bile duct with cholangitis, unspecified, with obstruction         |
| K80.32 | Calculus of bile duct with acute cholangitis without obstruction              |

|        |  |
|--------|--|
| K80.33 | Calculus of bile duct with acute cholangitis with obstruction                                  |
| K80.34 | Calculus of bile duct with chronic cholangitis without obstruction                             |
| K80.35 | Calculus of bile duct with chronic cholangitis with obstruction                                |
| K80.36 | Calculus of bile duct with acute and chronic cholangitis without obstruction                   |
| K80.37 | Calculus of bile duct with acute and chronic cholangitis with obstruction                      |
| K80.40 | Calculus of bile duct with cholecystitis, unspecified, without obstruction                     |
| K80.41 | Calculus of bile duct with cholecystitis, unspecified, with obstruction                        |
| K80.42 | Calculus of bile duct with acute cholecystitis without obstruction                             |
| K80.43 | Calculus of bile duct with acute cholecystitis, with obstruction                               |
| K80.44 | Calculus of bile duct with chronic cholecystitis without obstruction                           |
| K80.45 | Calculus of bile duct with chronic cholecystitis with obstruction                              |
| K80.46 | Calculus of bile duct with acute and chronic cholecystitis without obstruction                 |
| K80.47 | Calculus of bile duct with acute and chronic cholecystitis with obstruction                    |
| K80.50 | Calculus of bile duct without cholangitis or cholecystitis without obstruction                 |
| K80.51 | Calculus of bile duct without cholangitis or cholecystitis with obstruction                    |
| K80.60 | Calculus of gallbladder and bile duct with cholecystitis, unspecified, without obstruction     |
| K80.61 | Calculus of gallbladder and bile duct with cholecystitis, unspecified, with obstruction        |
| K80.62 | Calculus of gallbladder and bile duct with acute cholecystitis without obstruction             |
| K80.63 | Calculus of gallbladder and bile duct with acute cholecystitis with obstruction                |
| K80.64 | Calculus of gallbladder and bile duct with chronic cholecystitis without obstruction           |
| K80.65 | Calculus of gallbladder and bile duct with chronic cholecystitis with obstruction              |
| K80.66 | Calculus of gallbladder and bile duct with acute and chronic cholecystitis without obstruction |
| K80.67 | Calculus of gallbladder and bile duct with acute and chronic cholecystitis with obstruction    |
| K80.70 | Calculus of gallbladder and bile duct without cholecystitis without obstruction                |
| K80.71 | Calculus of gallbladder and bile duct without cholecystitis with obstruction                   |
| K80.81 | Other cholelithiasis with obstruction  |
| K81.0  | Acute cholecystitis  |
| K81.1  | Chronic cholecystitis  |
| K81.2  | Acute cholecystitis w chronic cholecystitis  |
| K81.9  | Cholecystitis, unspecified   |

|        |   |
|--------|---|
| K82.A1 | Gangrene of gallbladder in cholecystitis    |
| K82.2  | Perforation of gallbladder                  |
| K82.A2 | Perforation of gallbladder in cholecystitis |
|        |   |

### Cholangitis, Gallstone Pancreatitis

|        |   |
|--------|---|
| K83.09 | Other cholangitis   |
| K83.1  | Obstruction of bile duct  |
| K83.2  | Perforation of bile duct  |
| K83.3  | Fistula of bile duct  |
| K85.10 | Biliary acute pancreatitis <b>without necrosis or infection</b> |
| K85.11 | Biliary acute pancreatitis with uninfected necrosis             |
| K85.12 | Biliary acute pancreatitis with infected necrosis               |
|        |   |

### 3. Small Bowel Obstruction

|         |   |
|---------|---|
| K35.1   | Obstruction of duodenum   |
| K50.012 | Crohn's disease of small intestine with intestinal obstruction                            |
| K50.812 | Crohn's disease of both small and large intestine with intestinal obstruction             |
| K50.912 | Crohn's disease, unspecified, with intestinal obstruction                                 |
| K56.1   | Intussusception   |
| K56.2   | Volvulus  |
| K56.5   | Intestinal adhesions [bands] with obstruction (postinfection)                             |
| K56.50  | Intestinal adhesions [bands], unspecified as to partial versus complete obstruction       |
| K56.51  | Intestinal adhesions [bands], with partial obstruction                                    |
| K56.52  | Intestinal adhesions [bands], with complete obstruction                                   |
| K56.600 | Partial intestinal obstruction, unspecified as to cause                                   |
| K56.601 | Complete intestinal obstruction, unspecified as to cause                                  |
| K56.609 | Unspecified intestinal obstruction, unspecified as to partial versus complete obstruction |

|         |  |
|---------|--|
| K56.69  | Other intestinal obstruction   |
| K56.690 | Other partial intestinal obstruction   |
| K56.691 | Other complete intestinal obstruction  |
| K56.699 | Other intestinal obstruction unspecified as to partial versus complete obstruction |
| K91.30  | Postprocedural intestinal obstruction, unspecified as to partial versus complete   |
| K91.31  | Postprocedural partial intestinal obstruction                                      |
| K91.32  | Postprocedural complete intestinal obstruction                                     |
|         |  |

**Hernia with small bowel obstruction**

|        |  |
|--------|--|
| K40.00 | Bilateral inguinal hernia, with obstruction, without gangrene, not specified as recurrent  |
| K40.30 | Unilateral inguinal hernia, with obstruction, without gangrene, not specified as recurrent |
| K40.31 | Unilateral inguinal hernia, with obstruction, without gangrene, recurrent                  |
| K41.00 | Bilateral femoral hernia, with obstruction, without gangrene, not specified as recurrent   |
| K41.01 | Bilateral femoral hernia, with obstruction, without gangrene, recurrent                    |
| K41.30 | Unilateral femoral hernia, with obstruction, without gangrene, not specified as recurrent  |
| K41.31 | Unilateral femoral hernia, with obstruction, without gangrene, recurrent                   |
| K42.0  | Umbilical hernia with obstruction, without gangrene  |
| K43.0  | Incisional hernia with obstruction, without gangrene                                       |
| K43.3  | Parastomal hernia with obstruction, without gangrene                                       |
| K43.6  | Other and unspecified ventral hernia with obstruction, without gangrene                    |
| K44.0  | Diaphragmatic hernia with obstruction, without gangrene                                    |
| K45.0  | Other specified abdominal hernia with obstruction, without gangrene                        |
| K46.0  | Unspecified abdominal hernia with obstruction, without gangrene                            |
|        |  |

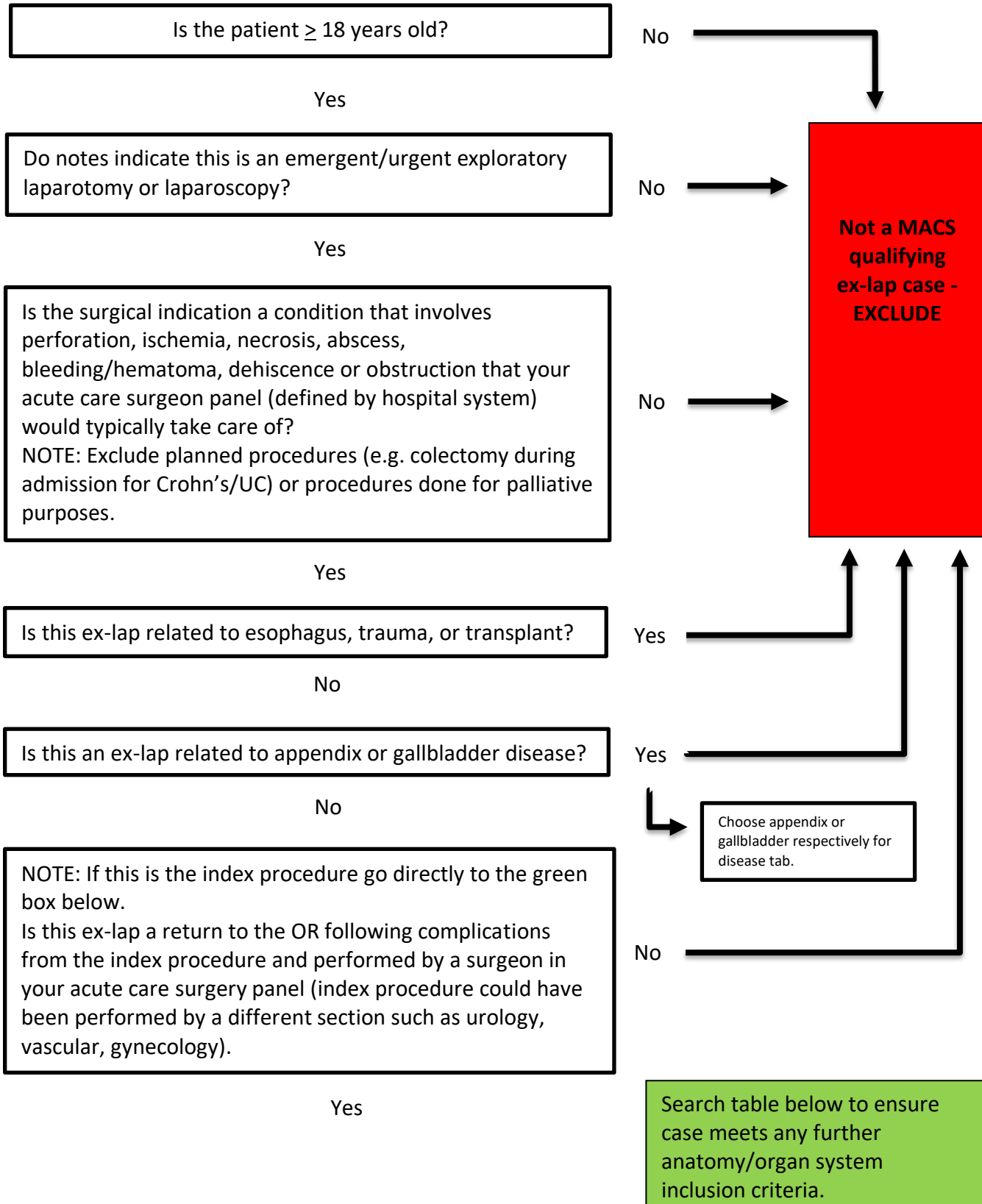
#### **4. Exploratory Laparotomy**

First follow the MACS Exploratory Laparotomy Algorithm on the following page to determine if the surgery is a MACS qualifying case.

Then refer to the chart below the algorithm to ensure that the case meets any further anatomy/organ system inclusion criteria.



## MACS Exploratory Laparotomy Algorithm



### Additional Inclusion/Exclusion based on Anatomy or Organ System

|                | Included                                  | Excluded   |
|----------------|---|--|
| Appendix       |   | All laparotomies where the primary pathology is appendicitis are excluded regardless of the severity of the procedure (unless an appendectomy was a part of a bowel resection for a non-appendicitis diagnosis). |
| Esophagus      |   | Laparotomy/laparoscopy for esophageal pathology.   |
| Trauma         |   | Laparotomy/laparoscopy for any pathology caused by blunt or penetrating trauma including laparotomy for removal of foreign body from rectum/sigmoid.   |
| Transplant     |   | All surgery related to organ transplantation (including returns to surgery for complications of <i>recent</i> organ transplant).   |
| Pancreas       | Pancreatectomy of any type.               | Whipple for cancer   |
| Biliary System | Laparotomy/enterotomy for gallstone ileus | All surgery involving the gallbladder or biliary tree excluded, unless cholecystectomy was a part of a bowel resection for a non-gallbladder diagnosis.  |

|                  |  |  |
|------------------|--|--|
| Stomach          | <p>Emergency laparotomy or laparoscopy for gastric pathology (e.g. gastric bleed, paraesophageal/hiatus hernia repair, perforation, ischemia, removal of gastric bands, swallowed foreign body).</p> <p>Emergency laparotomy or laparoscopy for iatrogenic gastric perforation after endoscopic procedures.</p>                                    |  |
| Small bowel      | <p>Emergency laparotomy or laparoscopy for conditions involving small bowel (e.g. bleeding, duodenal ulcer, ischemia, perforation, gallstone ileus, removal of swallowed foreign bodies, ileostomy).</p> <p>Exploratory laparotomy or laparoscopy for small bowel obstruction caused by volvulus, hernia, internal hernia, or mass/malignancy.</p> |  |
| Colon/<br>Rectum | <p>Emergency laparotomy or laparoscopy for conditions involving the colon and rectum.</p> <p>Emergency laparotomy or laparoscopy for iatrogenic colonic perforation after endoscopic procedures.</p> <p>Emergency formation of colostomy or emergent stoma formation.</p>  | <p>Emergency laparotomy or laparoscopy for removal of foreign body from colon/rectum as this is considered trauma.</p> |
| Vascular         | <p>Laparotomy for bowel ischemia</p>   | <p>Emergency laparotomy for vascular pathology related to aneurysm, bleeding or compartment syndrome.</p>              |

|              |   |   |
|--------------|---|---|
| GYN          | Gynecological laparotomy or laparoscopy if the primary pathology is proven to be general surgical.          | Gynecological laparotomy (e.g. ruptured ectopic, pelvic abscess due to pelvic inflammatory disease).                        |
| Peritoneum   | Washout/drainage of peritoneal abscess or hematoma.   | Removal of peritoneal dialysis catheters.<br>Surgery related to sclerosing peritonitis                                      |
| Hernias      | Emergent hernia reduction and/or repair for large or small bowel obstruction. Reduction of internal hernia. | Non-emergent, non-obstructive hernias.  |
| Adhesiolysis | Emergent/urgent laparotomy or laparoscopic adhesiolysis.  |   |
| Dehiscence   | Return to surgery for major abdominal wound dehiscence (e.g. fascial dehiscence, "burst abdomen").          | Minor/superficial abdominal wound dehiscence (e.g. skin/subcutaneous) unless it causes bowel pathology requiring resection. |