



EAST MULTICENTER STUDY DATA COLLECTION TOOL

Multicenter Study: *Colorectal resection in Emergency General Surgery – To anastomose, or not to anastomose?*

Enrolling Center: _____

Patient Number: _____

The following sheets are for annotation.

All data will be entered electronically at each site into REDCap for secure/encrypted electronic sharing with the coordinating site.

Demographics (3-50):

Age: _____ years Sex (M/F): _____ Weight: _____ kg Height: _____ m

Tobacco Use (*circle one*): Never Current Former Independent living pre-operatively: YES NO

Length of hospital stay prior to initial operation: _____ days

10-32. Past Medical History (check all that apply):

Diabetes mellitus:	_____ NO	_____ Without end-organ damage	_____ With end-organ damage
Liver disease:	_____ NO	_____ Mild	_____ Moderate or severe
Cerebrovascular disease:	_____ NO	_____ CVA without hemiplegia	_____ Hemiplegia/paraplegia
Cancer:	_____ NO	_____ Lymphoma	_____ Leukemia
	_____ Solid tumor (<i>specify</i>) _____		Metastatic: YES NO
	Currently receiving chemotherapy:	YES NO	

_____ Ischemic heart disease	_____ Congestive heart failure	_____ Atrial fibrillation
_____ Rheumatic or connective tissue disease	_____ Peripheral vascular disease	_____ Chronic kidney disease
_____ Steroid use	_____ Dementia	_____ Peptic ulcer disease
_____ Inflammatory bowel disease	_____ Chronic pulmonary disease	_____ AIDS
_____ Warfarin/Coumadin use	_____ Prior laparotomy	_____ Prior laparoscopy
_____ NSAID use	_____ Novel oral anticoagulant use	_____ Dual antiplatelet therapy
	_____ Other immunosuppressants (<i>which?</i>) _____	

33-48. Lab values/Pre-operative exam (use worst value in 24-hour period prior to index operation):

Vital signs: T_{Max}: _____ °C; HR: _____ bpm; RR: _____ /min; SBP: _____ mmHg; MAP _____ mmHg

Continuous vasopressor infusion YES NO If YES, please specify: _____

Glasgow Coma Scale (3-15): _____

Free air/perforated viscus YES NO

Intubated: YES NO

Hemoglobin: _____ g/dL WBC count: _____ x10³/μL Platelet count: _____ x 10³/μL INR: _____

Creatinine: _____ mg/dL GFR: _____ Albumin: _____ mg/dL Bilirubin: _____ mg/dL

* 999 if patient is receiving renal replacement therapy

PaO₂: _____ mmHg FiO₂: _____ % Lactate: _____ mmol/L

49. Diagnosis (circle one):

Obstruction	Hernia	Ischemia	Diverticulitis	Infectious colitis
Pancreatitis	Appendicitis	Bleeding	Other: _____	

50. AAST Organ-specific EGS Grade (circle one): I II III IV V N/A

Contact EASTColorectal@gmail.com with questions or concerns.

Management Variables (51-78):

51-62. Operative variables:

Surgical approach (*circle one*): Open Laparoscopic Laparoscopic converted to open

Primary surgeon's years of experience: _____ years Resident participation: YES NO Length of operation: _____ min

Bowel Prep: NO Mechanical Oral Antibiotic Mechanical + Oral Antibiotic

Method of colon management (*circle one*):

Resection + anastomosis Resection + proximal diversion (no colonic anastomosis) Resection + anastomosis with proximal diversion

Anastomosis location (*circle one*): Ileo-colic Colo-colonic Colo-rectal Ileo-rectal
Other: _____ None

Simultaneous small bowel resection (*excluding TI in ileocectomy; circle one*): YES NO

Resection specimen (*select all that apply*):

_____ Ileocecal _____ Ascending colon _____ Transverse colon
_____ Descending colon _____ Rectum _____ Total abdominal colectomy

Method of colonic anastomosis (*circle one*):

Hand-sewn Stapled Combined handsewn+stapled N/A (resection + proximal diversion)

If hand-sewn, in how many layers? Single layer Two layer N/A
If stapled, which type of stapler was used? Circular Linear N/A
If stapled, was the staple line oversewn? YES NO N/A
For rectal or low-colonic anastomoses, was a leak test performed? YES NO N/A
Was a leak identified? YES NO N/A
Did you divert based on results of leak test? YES NO N/A

Method of fecal diversion (*circle one*):

Loop ileostomy End ileostomy Loop colostomy End colostomy N/A (resection+anastomosis)

Fecal contamination: YES NO

63-68. OR Fluid totals:

Intra-operative blood loss: _____ cc Total Intra-operative blood products given:
PRBC: _____ Units
FFP: _____ Units
Platelet: _____ Units
Non-blood colloid: _____ mL

69-72. Intraoperative physiology:

Hypotension (*single measurement of systolic blood pressure < 90 mmHg*): YES NO
Vasopressor therapy (*IV infusion at anytime intraoperatively*): YES NO
Hypothermia (*single body temperature recording < 36 °C*): YES NO
Lowest recorded arterial pH (*enter 999 if ABG not obtained intraoperatively*): _____

73-78. Damage control/open abdomen (proceed to Outcomes if fascia closed at index operation):

Indication for use of open abdominal management (*check one that best applies*):

_____ Coagulopathy _____ Facilitate early re-exploration and urgent/emergent re-evaluation (*i.e., assessment of bowel viability*)
_____ Contamination burden _____ Other: _____
_____ Shock
_____ Abdominal compartment syndrome

Total number of operations prior to fascia/mesh/skin closure (*index operation = 1*): _____

For the following questions, enter 0 if event occurred at index operation, 999 if never occurred (see Dictionary)

Day of colon anastomosis after initial operation if patient with an open abdomen: _____ Post-operative day

Day of fecal diversion after initial operation if patient with an open abdomen: _____ Post-operative day

Day of fascial closure after initial operation if patient with an open abdomen: _____ Post-operative day

Was bowel resected at operations other than the index operation? YES NO

Outcomes (79-107):

79-89. Intra-abdominal complication (check all that apply, include post-operative day encountered):

_____ Anastomotic leak/dehiscence	Post-operative day discovered _____
_____ Intra-abdominal abscess (organ-space SSI)	Post-operative day discovered _____
_____ Superficial surgical site infection	Post-operative day discovered _____
_____ Deep-incisional surgical site infection	Post-operative day discovered _____
_____ Enterocutaneous/atmospheric fistula	Post-operative day discovered _____
_____ Bowel obstruction requiring operative intervention	Post-operative day discovered _____
_____ Stoma complication requiring operative intervention	Post-operative day discovered _____
_____ Fascial dehiscence	Post-operative day discovered _____

Need for unplanned operative intervention for one of these complications (*circle one*): YES NO

Need for placement of a percutaneous drain for one of these complications (*circle one*): YES NO

Need for initiation or modification of antibiotics for one of these complications (*circle one*): YES NO

90-93. Nutritional outcomes (circle one):

Was goal enteral nutrition achieved by postoperative day 7? YES NO

Need for parenteral nutrition: YES NO

Need for antimotility or bulking agents: YES NO

Need for intravenous fluids (*supplemental, for dehydration*): YES NO

94-103. Other complications (check all that apply):

_____ Evidence of malignancy on pathology	_____ BSI	_____ C. difficile infection
_____ Acute renal failure (Cr >2.0/dialysis)	_____ Sepsis	_____ Myocardial Infarction
_____ Tracheostomy	_____ Mechanical ventilation required at discharge	

Antibiotics used for colon pathology (*circle one, include duration of antibiotic course*):

Preoperative: YES NO	Duration of course: _____ days
Postoperative: YES NO	Duration of course: _____ days

Use of the following within 72-hours of final operation (*circle one*):

NSAID	YES	NO
Vasopressor	YES	NO
Transfusions	YES	NO
Corticosteroids	YES	NO

104-107. Discharge Parameters:

Hospital LOS: _____ days ICU LOS: _____ days Duration of mechanical ventilation: _____ days

Discharge Nutrition (*circle one*): Full diet only Diet + Parenteral nutrition Parenteral nutrition only

Discharge disposition (*circle one*): Home Acute care facility Skilled nursing facility
Other health care facility Hospice Left against medical advice Deceased



**EAST MULTICENTER STUDY
DATA DICTIONARY**

Colorectal resection in Emergency General Surgery – To anastomose, or not to anastomose?

Data Entry Points and appropriate definitions / clarifications:

1. Enrolling center	A unique, de-identifying letter assigned by the PI to each site.
2. Patient number	A unique de-identifying number assigned by each site to each patient.

Demographics

3. Age	Age of patient in years. An alert will appear if you enter an age less than 18 years in the database (<i>exclusion criteria</i>).
4. Sex	Sex of patient (<i>Male or Female</i>). Patients who have undergone a surgical and/or hormonal sex reassignment should be coded using the current assignment.
5. Weight	Weight of patient in kilograms (kg).
6. Height	Height of patient in meters (m).
7. Tobacco use	If patient is an active smoker, select CURRENT. If patient quit smoking or is using nicotine replacement therapy, select FORMER.
8. Independent living pre-operatively	Select YES if the patient was living independently and performing activities of daily living prior to current hospitalization.
9. Length of hospital stay prior to initial operation	Indicate the number of days patient was hospitalized prior to initial operation. For calculation of days, refer to day of admission as hospital day number 1.

Past Medical History

Select all that apply.

10. Diabetes mellitus	Includes all patients with diabetes treated with insulin or oral hypoglycemic agents, but not diet alone. End organ-damage includes retinopathy, neuropathy, nephropathy, or brittle diabetes. Select NO if patient is controlled with diet-modification alone. Diabetes during pregnancy alone should not be counted.
11. Liver disease	Mild disease includes chronic hepatitis (B or C) or cirrhosis without portal hypertension. Moderate disease consists of cirrhosis with portal hypertension, but without bleeding. Severe disease consists of patients with ascites, chronic jaundice, portal hypertension, a history of variceal bleeding, or those with prior liver transplant.
12. Cerebrovascular disease	Cerebrovascular disease includes patients with a history of a cerebrovascular accident with minor or no residua and patients who have had transient ischemic attacks. If the patient has resultant hemiplegia or paraplegia, code only hemiplegia.
13. Cancer	Lymphoma includes patients with Hodgkins, lymphosarcoma, Waldenstrom's macroglobulinemia, myeloma, and other lymphomas. Leukemia includes patients with acute and chronic myelogenous leukemia, acute and chronic lymphocytic leukemia, and polycythemia vera. Solid tumor consists of patients with solid tumors including breast, colon, lung, prostate, melanoma, stomach, etc. Specify which solid tumor the patient had. Indicate whether the patient had a metastatic solid tumor. Specify whether the patient is currently receiving chemotherapy.
14. Ischemic heart disease	History of ischemic heart disease includes patients with one or more

	definite or probable myocardial infarction. These patients should have been hospitalized for chest pain or an equivalent clinical event and have had electrocardiographic (EKG) and/or enzyme changes. Patients with EKG changes alone who have no clinical history are not designated as having had ischemic heart disease. Also included are patients with history of positive exercise test, current chest pain considered to be due to myocardial ischemia, use of nitrate therapy, or EKG with pathological Q waves.
15. Congestive heart failure	Heart failure in which the heart is unable to maintain adequate circulation of blood in the bodily tissues or to pump out the venous blood returned. This includes patients who have had exertional or paroxysmal nocturnal dyspnea and who have responded symptomatically (or on physical examination) to digitalis, diuretics, or afterload reducing agents. Additionally, chest x-ray showing pulmonary vascular redistribution would qualify.
16. Atrial fibrillation	An abnormal, irregular heart rhythm in which electrical signals are generated chaotically throughout the atria.
17. Rheumatic or connective tissue disease	Rheumatologic disease includes patients with systemic lupus erythematosus, polymyositis, mixed connective tissue disease, rheumatoid arthritis, polymyositis, polymyalgia rheumatic, vasculitis, sarcoidosis, Sjögrens syndrome, or any other systemic vasculitis.
18. Peripheral vascular disease	Peripheral vascular disease includes patients with intermittent claudication or those who had a bypass for arterial insufficiency, those with gangrene or acute arterial insufficiency, and those with a treated or untreated aortic aneurysm (6 cm or larger).
19. Chronic kidney disease	Baseline elevation of serum creatinine ≥ 3.0 mg/dL, need for outpatient hemodialysis, or prior renal transplant.
20. Dementia	Dementia includes patients with moderate to severe chronic cognitive deficit resulting in impaired function from any cause.
21. Peptic ulcer disease	Peptic ulcer disease includes patients who have required treatment for ulcer disease, including those who have bled from peptic ulcers.
22. Steroid use	Daily use of ≥ 5 mg Prednisone (or its equivalent) for ≥ 2 weeks prior to hospitalization.
23. Chronic pulmonary disease	Chronic pulmonary disease includes patients with asthma, chronic bronchitis, emphysema, and other chronic lung disease who have ongoing symptoms such as dyspnea or cough with mild or moderate activity. This includes patients who are dyspneic with slight activity, with or without treatment and those who are dyspneic with moderate activity despite treatment, as well as patients who are dyspneic at rest, despite treatment, those who require constant oxygen, those with CO ₂ retention, and those with a baseline PO ₂ below 50 Torr.
24. AIDS	Acquired immune deficiency syndrome includes patients with definite or probable AIDS. Does not include those who are HIV positive, asymptomatic, and well-managed with medical therapy.
25. Inflammatory bowel disease	IBD includes patients with a known or assumed diagnosis of ulcerative colitis or Chron's disease.
26. Prior laparotomy	Any prior open abdominal surgery.
27. Prior laparoscopy	Any prior laparoscopic surgery.
28. Warfarin/Coumadin use	Warfarin/Coumadin use for any cause, at any goal INR.
29. Novel oral anticoagulant use	Use of other anticoagulant (e.g., dabigatran, rivaroxaban, apixaban).
30. Dual antiplatelet therapy	Use of Aspirin + Plavix in concert.
31. NSAID use	Regular intake of NSAIDs (including ibuprofen, naproxen sodium, ketorolac tromethamine, caldolor, celecoxib, and diclofenac) prior to hospitalization.
32. Other immunosuppressants	List other immunosuppressive medications that are not listed above (e.g., azathioprine, mycophenolate mofetil, cyclosporine, disease-modifying anti-rheumatic drugs, cytotoxic drugs).
Lab values/Pre-operative exam	<i>Use worst value in 24-hour period prior to index operation</i>

33. Vital signs	Indicate T _{MAX} (°C), heart rate (HR; beats/minute), respiratory rate (RR; respirations/minute), systolic blood pressure (SBP; mmHg), and mean arterial pressure (MAP; mmHg).
34. Continuous vasopressor infusion	Select YES if the patient required a continuous vasopressor infusion to maintain a target mean arterial pressure. Include the use of any of the following agents: norepinephrine, vasopressin, dopamine, dobutamine, neosynephrine, milrinone, epinephrine. Indicate which agent(s) was used.
35. Glasgow Coma Scale	Numerical value for Glasgow Coma Scale (3-15).
36. Intubated	Select YES if the patient is intubated prior to the index operation.
37. Free air or perforated viscus	Select YES if there was evidence of free air or a perforated viscus on preoperative imaging.
38. Hemoglobin	Numerical value for hemoglobin (g/dL).
39. WBC count	Numerical value for white blood cell (WBC) count (x10 ³ /uL).
40. Platelet count	Numerical value for platelet count (x10 ³ /uL).
41. INR	Numerical value for International Normalized Ratio (INR).
42. Creatinine	Numerical value for creatinine (mg/dL); enter 999 if patient is receiving preoperative renal replacement therapy.
43. GFR	Numerical value for glomerular filtration rate (GFR).
44. Albumin	Numerical value for albumin (mg/dL).
45. Bilirubin	Numerical value for bilirubin (mg/dL).
46. PaO₂	Numerical value for PaO ₂ (mmHg). Try to ensure that the blood gas was arterial before recording the value. If no arterial blood gas was obtained, enter 999 – do not enter 0.
47. FiO₂	Numerical value for FiO ₂ (%).
48. Lactate	Numerical value for lactate (mmol/L). If no Lactate was obtained, enter 999 – do not enter 0.
Disease Process	
49. Diagnosis	Single choice for best description of diagnosis. Choose from: diverticulitis, intestinal obstruction, ischemic bowel, hernia, infectious colitis, pancreatitis, appendicitis, bleeding, other.
50. AAST Organ-Specific Grade for Anatomic Severity of Disease	For diagnoses of diverticulitis, obstruction, ischemic bowel, hernia, infectious colitis, appendicitis, or pancreatitis, indicate AAST grade. Please specify grade based on operative findings as outlined below.

Grade	AAST Disease Grade Description	Diverticulitis	Intestinal Obstruction (Small and Large Bowel)	Ischemic Bowel
I	Disease confined to the organ with minimal abnormality	Colonic inflammation	Partial obstruction	Ischemia without tissue loss
II	Confined to the organ with severe abnormality	Colon microperforation or pericolic phlegmon without abscess	Complete obstruction without bowel ischemia	Ischemia with mucosal ulceration only – no transmural infarction
III	Local extension beyond the organ	Localized pericolic abscess	Complete obstruction, bowel ischemic but viable	Segmental transmural infarction without perforation
IV	Regional extension beyond the organ	Distant abscesses	Complete obstruction with gangrenous bowel OR perforation with local spillage	Segmental transmural infarction with perforation
V	Widespread extension beyond the organ	Free colonic perforation with generalized peritonitis	Perforation with diffuse peritoneal contamination	Pan-intestinal infarction

Grade	Hernia (Internal or Abdominal Wall)	Pancreatitis	Infectious Colitis	Appendicitis
I	Reducible	Acute edematous pancreatitis	Mucosal disease with positive cultures or other confirmatory laboratory test	Acutely inflamed appendix, intact

Contact EASTColorectal@gmail.com with questions or concerns.

II	Incarcerated without bowel ischemia	Phlegmon OR peripancreatic fluid collection OR hemorrhage	Localized colon wall thickening by radiographic imaging OR pseudo-membranes on endoscopy	Gangrenous appendix, intact
III	Incarcerated with bowel ischemic but viable	Sterile necrosis	Colon wall thickening with ascites OR diffuse colonic dilation OR diffuse coalescing pseudo-membranes	Perforated appendix with local contamination
IV	Incarcerated with gangrenous bowel OR perforation with local spillage	Infected necrosis or abscess	Localized colonic necrosis with or without perforation or abscess	Perforated appendix with periappendiceal phlegmon or abscess
V	Incarcerated with perforation and diffuse peritoneal contamination	Extrapancreatic extension of necrosis involving adjacent organs, such as colonic necrosis	Diffuse transmural colonic necrosis with or without perforation or abscess	Perforated appendix with generalized peritonitis

Management Variables

Operative Variables	
51. Surgical approach	Select one: open, laparoscopic, laparoscopic converted to open.
52. Primary surgeon's years of experience	Indicate the primary surgeon's years of experience beyond residency (or fellowship, for a fellowship trained surgeon). If multiple surgeons were involved in a patient's care, indicate the experience of the primary surgeon involved in the index operation.
53. Resident participation	Select YES if a resident participated in the index operation.
54. Length of operation	Enter recorded operation duration in minutes (incision to closure).
55. Bowel prep	Specify whether a mechanical, oral antibiotic, combination, or no bowel prep was administered pre-operatively.
56. Method of colon management	Select one: <ul style="list-style-type: none"> - Colon resection with anastomosis (no fecal diversion) - Colon resection with proximal diversion (no colonic anastomosis) - Colon resection and anastomosis with proximal diversion.
57. Anastomosis location	Select one: ileocolic, colocolonic, colorectal, ileorectal, other (<i>please specify</i>), not applicable (resection with proximal diversion).
58. Simultaneous small bowel resection	Select YES if a segment of small bowel was resected during the operative course. If ileocectomy was performed, resection of terminal ileum does not count.
59. Resection specimen	Select all that apply: <ul style="list-style-type: none"> - Ileocecal (terminal ileum and cecum) - Ascending colon (proximal to the hepatic flexure) - Transverse colon (between the hepatic and splenic flexures) - Descending colon (between the splenic flexure and sigmoid colon) - Rectum (distal to sigmoid colon) - Total abdominal colectomy (ileum to rectum).
60. Method of colonic anastomosis	Select one: <ul style="list-style-type: none"> - Hand-sewn (complete) - Stapled (complete) - Combined stapled + hand-sewn - Not applicable (resection with proximal diversion) <p>If hand sewn, indicate whether anastomosis was performed in a single layer OR two layer. If stapled, indicate whether a circular or linear stapler was used. If stapled, indicate whether the staple line was oversewn. For rectal or low-colonic anastomoses, indicate whether a leak test performed. If a leak test was performed, indicate whether a leak was identified. If a leak was identified, indicate whether fecal diversion was</p>

	performed based on this information.
61. Method of fecal diversion:	Select one: loop ileostomy, end ileostomy, loop colostomy, end colostomy, not applicable (resection with anastomosis).
62. Fecal contamination	Select YES if any degree of fecal contamination was present on the index operation.
OR Fluid totals	<i>How many mL or units of each of the following did the patient receive intraoperatively?</i>
63. Intraoperative blood loss	Numerical value for recorded blood loss (mL).
64. PRBC volume	Numerical value for units of packed red blood cells (PRBC) transfused.
65. FFP volume	Numerical value for units of fresh frozen plasma (FFP) transfused.
66. Platelet volume	Numerical value for units of platelets transfused.
67. Non-blood colloid	Numerical value for non-blood colloid transfused (albumin, hespan, hextend, other colloid; mL).
68. Total fluid balance from OR	Total fluid administered (crystalloid, blood product, and colloid) – intraoperative blood loss (in cc). If a negative number annotate with a negative (-) sign.
Intraoperative Physiology	<i>Indicate whether the following criteria are met at any time intraoperatively.</i>
69. Hypotension	Select YES if there was at least one episode of SBP < 90mmHg.
70. Vasopressor therapy	Select YES if any of the following agents were used as continuous infusions: norepinephrine, vasopressin, dopamine, dobutamine, neosynephrine, milrinone, epinephrine.
71. Hypothermia	Select YES if the patient's body temperature was below 36.0° Celsius for at least one recorded time point.
72. Lowest recorded arterial pH	Indicate the lowest recorded arterial pH. Enter 999 if an ABG was not obtained intraoperatively; do not enter 0. Try to ensure that the blood gas was arterial before recording the value.
Damage control/open abdomen	<i>Proceed to Outcomes if fascia closed at index operation.</i>
73. Indication for use of open abdominal management	Select the one that applies best: coagulopathy, contamination burden, shock, abdominal compartment syndrome, facilitate early re-exploration and urgent/emergent re-evaluation (i.e., assessment of bowel viability), other. Please specify if OTHER is chosen.
74. Total number of surgical operations	Total number of operations. Index operation = 1. Do not include procedures done by radiologists or interventional radiologists.
75. Day of colon anastomosis	Enter post-operative day. Enter 0 if event occurred at index operation, 999 if it never occurred.
76. Day of fecal diversion	Enter post-operative day. Enter 0 if event occurred at index operation, 999 if it never occurred.
77. Day of fascial closure	Enter post-operative day. Enter 0 if event occurred at index operation, 999 if it never occurred.
78. Was bowel resected at operations other than the index operation?	Select YES if bowel was resected in subsequent operations.

Outcomes

Intra-abdominal complications	<i>Select all that apply. Indicate post-operative day complication was discovered.</i>
79. Anastomotic leak/dehiscence	May be diagnosed through a combination of clinical indicators such as pain or peritonitis and biochemical markers such as fever or tachycardia WITH either intraoperative findings OR radiologic studies showing fluid collections, gas-containing collections, or extravasation of enteral contrast.
80. Intra-abdominal abscess/source for sepsis (organ/space surgical site infection)	Infection occurs within 30 days of the operation if no implant is left in place or within 1 year if implant is in place and involves any part of the body deeper than the fascial/muscle layers, that is opened or manipulated during the operative procedure, and patient has at least one of the following: 1. Purulent drainage from a drain that is placed into the organ/space

	<p>(e.g., closed suction drainage system, open drain, T-tube drain, CT-guided drain)</p> <p>2. Organisms are identified from an aseptically-obtained fluid or tissue in the organ/space by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment</p> <p>3. An abscess or other evidence of infection involving the organ/space detected on gross anatomical or radiographic examination. May be diagnosed through a combination of clinical indicators such as pain or peritonitis and biochemical markers such as fever or tachycardia WITH either intraoperative findings OR radiologic studies showing fluid collections or gas-containing collections.</p>
81. Superficial surgical site infection	<p>Infection occurs within 30 days of the operation and involves only skin and subcutaneous tissue of the incision with at least one of the following:</p> <p>1. Purulent drainage from the incision</p> <p>2. Organisms isolated from an aseptically obtained fluid culture or tissue from the superficial incision</p> <p>3. At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision is deliberately opened by surgeon, unless incision is culture negative.</p>
82. Deep-incisional surgical site infection	<p>Infection occurs within 30 days of the operation if no implant is left in place or within 1 year if implant is in place and infection appears to be related to the operation. Infection involves deep soft tissues (fascial and muscle layers) of the incision with at least one of the following:</p> <p>1. Purulent drainage from deep incision but not from the organ/space component of the surgical site</p> <p>2. A deep incision spontaneously dehisces or is deliberately opened when the patient has at least one of the following signs or symptoms: fever (body temperature >38° C), localized pain or tenderness</p> <p>3. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation or radiographic examination.</p>
83. Enterocutaneous/atmospheric fistula	Clinical diagnosis, defined as free communication between the skin or outside surface of an open abdomen and any portion of the GI tract.
84. Bowel obstruction requiring operative intervention	Select YES if the postoperative course was complicated by bowel obstruction requiring an unplanned operation (including small bowel).
85. Stoma complication requiring operative intervention	Include stoma necrosis, prolapse, retraction that required operative intervention.
86. Fascial dehiscence	Separation of the surgical wound at the level of the fascia. May be clinically OR radiographically diagnosed.
87. Need for unplanned operative intervention	Select YES if the patient required unplanned re-operative intervention for one of these complications (79-86).
88. Need for placement of percutaneous drain	Select YES if the patient required unplanned placement of a percutaneous drain for one of these complications (79-86).
89. Need for initiation or modification of antibiotic	Select YES if the patient required the initiation or modification of antibiotic therapy to manage one of these complications (79-86). Include alterations to antibiotic duration, escalation of antibiotics, or initiation of antibiotics after an antibiotic-free interval postoperatively. Do not include antibiotics that were initiated pre- or postoperatively and not modified or de-escalation of antibiotics based on operative culture data.
Nutritional outcomes	
90. Was goal enteral nutrition achieved by postoperative day 7?	Select YES if goal enteral nutrition was achieved by postoperative day 7. Goal enteral nutrition is determined by care team.
91. Need for parenteral nutrition	Select YES if patient required parenteral nutrition was needed to

	achieve goal nutritional intake as determined by care team.
92. Need for antimotility or bulking agents	Select YES if patient required antimotility agents to reduce stool output (<i>i.e.</i> , loperamide, diphenoxylate/atropine, tincture of opium).
93. Need for intravenous fluids	Select YES if patient required intravenous fluids to maintain fluid balance related to increased stoma output.
Other complications	<i>Select all that apply.</i>
94. Evidence of malignancy on pathology	Resected colon specimen remarkable for malignancy on the final pathology report.
95. Blood stream infection	Positive cultures obtained from aseptically obtained blood sample.
96. <i>C. difficile</i> infection	Positive stool cultures, toxin, or other confirmatory laboratory testing.
97. Acute renal failure	Post-operative elevation of serum creatinine ≥ 2.0 mg/dL in a patient without antecedent renal dysfunction <i>OR</i> acute need for renal replacement therapy.
98. Sepsis	Confirmed infectious source AND ≥ 2 of the following: 1. Body temperature $<36^{\circ}$ Celsius or $>38^{\circ}$ C 2. Heart rate >100 bpm 3. Respiratory rate >20 breaths per minute or PaCO ₂ <32 mmHg on arterial blood gas 4. WBC count $<4,000$ cells/mm ³ or $>12,000$ cells/mm ³ or $>10\%$ band forms.
99. Myocardial infarction	Detection of a rise of cardiac biomarker values (preferably troponin) with at least one of the following: - Symptoms of ischemia - New or presumed new significant ST-segment changes or new left bundle branch block - New Q waves in the EKG - Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality - Identification of intracoronary thrombus.
100. Tracheostomy	A surgical airway was established during the patient's hospitalization.
101. Requiring mechanical ventilation at discharge	Patient discharged to a facility with ongoing mechanical ventilation.
102. Antibiotics used for colon pathology.	Indicate whether antibiotics were used and their duration both pre- and post-operatively. Do not include antibiotics for other infections if not related to underlying colorectal pathology.
103. Use of the following within 72-hours of final operation	Select YES if any of the following were used within 72-hours of final operation. - NSAIDs (including ibuprofen, naproxen sodium, ketorolac tromethamine, caldolor, celecoxib, and diclofenac) - Vasopressor including norepinephrine, vasopressin, dopamine, dobutamine, neosynephrine, milrinone, epinephrine - Transfusions including PRBC, FFP, platelet, cryoprecipitate - Corticosteroids (any dose).
Discharge parameters	<i>Note: for calculation of days, refer to day of admission as hospital day number 1. (ICU = Intensive Care Unit, LOS = length of stay).</i>
104. Hospital LOS	Free text entry for number of consecutive hospitalized days.
105. ICU LOS	Free text entry of number of consecutive days spent in ICU.
106. Duration of mechanical ventilation	Free text entry for total number of days patient required mechanical ventilation. Enter 999 if patient was discharged requiring mechanical ventilation.
107. Discharge disposition	Select from the following: home, acute care facility, skilled nursing facility, other healthcare facility, hospice, left against medical advice, deceased.