



Inflammatory Bowel Disease Enhanced Recovery After Surgery Pathway Synopsis

Inflammatory Bowel Disease: Prior to Surgery Day Algorithm

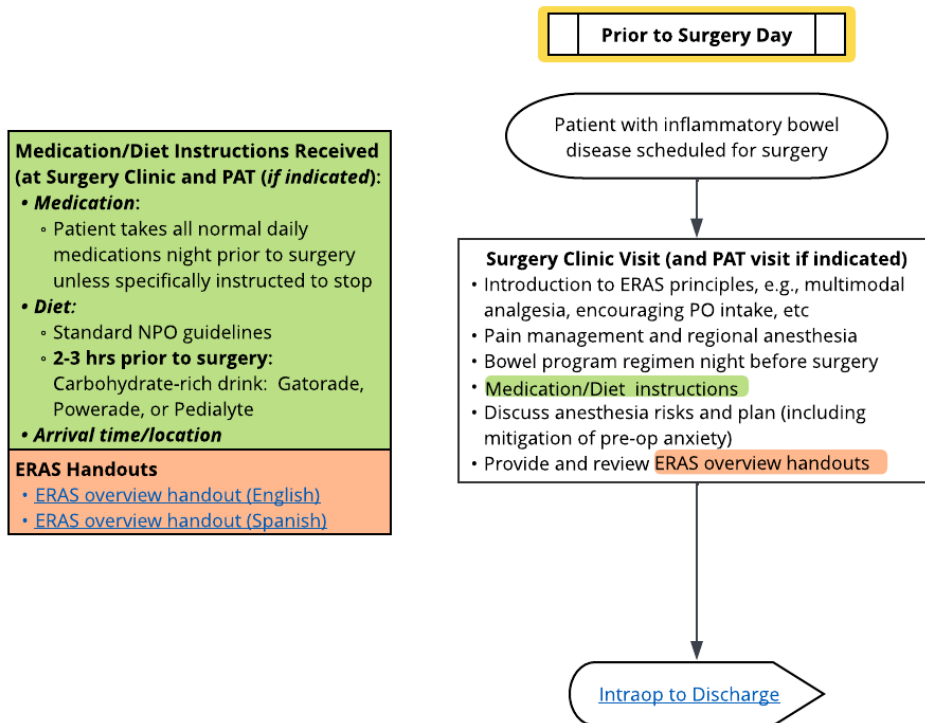
Inclusion criteria:

Any patient > 4 years old undergoing elective surgery for Crohn's disease or ulcerative colitis:

- Laparoscopic Ileocectomy



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Inflammatory Bowel Disease: Preoperative to Discharge Algorithm

Inclusion criteria:

Any patient > 4 years old undergoing elective surgery for Crohn's disease or ulcerative colitis:
• Laparoscopic ileocecectomy

Celecoxib Options

- Open and mix with a small amount of clear liquid if patient is unable to swallow pills

Preoperative Care

Preoperative Care

- Carbohydrate-rich drink up to 2 hours before surgery
- **Celecoxib** PO 50 mg for patients 10 - 25 kg, 100 mg for pts ≥ 25 kg
- Contraindicated for patients with chronic renal failure, NSAID allergy or sulfa allergy
- Anxiolysis - midazolam (unless contraindicated) per anesthesia team



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Intraoperative

Intraoperative Medication Bundle

- **Antibiotics:**
 - Discuss at huddle
 - Administer before incision
- **Antiemetics:**
 - Amisulpride 5 mg for pts ≥ 50 kg at beginning of case
 - Dexamethasone 0.1 mg/kg (max 8 mg)
 - Ondansetron 0.15 mg/kg (max 8 mg)
- **Multimodal analgesia:**
 - Methadone 0.1 mg/kg (max 10 mg) at beginning of case
 - IV acetaminophen 10 - 15 mg/kg at beginning of case
 - Ketamine 0.5 mg/kg - 1 mg/kg bolus at beginning of case or consider infusion
 - Consider dexmedetomidine bolus at end of case
- **Limit IV opioids:**
 - Fentanyl prn
 - Avoid long-acting opioids

*** Ketorolac SHOULD NOT be given intra-operatively***

Regional Anesthesia

Please involve an APS physician

- **Discuss with surgeon at huddle**
- **Transverse Abdominal Plane (TAP) Blocks**
 - Ropivacaine 0.2% 0.5 ml/kg up to 20 ml per side
 - Be mindful of toxic local anesthetic dosages when multiple blocks are performed
- **Adjuncts:** 1 mcg/kg clonidine to block solution unless contraindicated

Surgeon injects local if no regional anesthesia

Maintenance of Anesthesia

- **Volatile** or TIVA maintenance at discretion of anesthesiologist
 - TIVA preferred if history of PONV
- **Normothermia:**
 - Room temperature set to 70° F
 - Utilize Bair Hugger
 - Goal for intraoperative temperature 36° - 38° C
- **Euvolemia:**
 - Goal is clinical euvolemia (zero fluid balance, no net weight gain on POD #1)
 - **Plasmalyte at 3 - 7 ml/kg/hr** (additional as clinically indicated)

Transfer to PACU

Postoperative - Inpatient to Discharge

Goals of care prior to discharge

Bowel regimen

- Daily bowel movement with prescribed regimen (refer to orders)

PONV & Diet

- Avoid use of NG tube (if possible)
- Decrease IV fluids once patient is tolerating liquids and discontinue thereafter
 - Start clear liquid diet **-and-** advance as tolerated independent of bowel function
- Ondansetron 0.1 mg/kg (max 8 mg) q 6 hrs prn

Postoperative Pain Management

- Minimize long-acting opioids
- Acetaminophen - scheduled (10 mg/kg/dose q 4 hrs prn)
- Ibuprofen - scheduled (10 mg/kg/dose given q 6 hrs prn)
- Oxycodone - transition to PO (0.1 mg/kg/dose given q 4 hrs prn) once tolerating clears
- Diazepam 0.05 - 0.1 mg/kg (max 5 mg) PRN q 6 hrs for muscle spasms

Ambulation

- Encourage ambulation 3x/day (if patient is allowed to ambulate independently)
- **-or-** majority of day out of bed
- Consider P.T. consult

Discharge home with post-operative follow up visit in 2 - 6 weeks

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Objective of ERAS Pathway

The objectives of the Inflammatory Bowel Disease (IBD) ERAS pathway are to minimize the variation of care for the patient undergoing colorectal surgery, starting with the pre-admission testing visit and continuing through hospital discharge.

Background

Inflammatory bowel diseases (IBD), including Crohn's disease (CD), ulcerative colitis (UC), and IBD unclassified (IBDU), are chronic gastrointestinal conditions, with up to 30% of cases presenting in childhood (Dipasquale et al., 2022). Within 10 years of diagnosis, 20-30% of pediatric patients require surgery to improve quality of life (Dipasquale et al., 2020, 2022, 2024; Turunen et al., 2009). Optimizing perioperative care is essential, as children with IBD often experience intense physical stress responses to conservative approaches, which typically involve prolonged fasting, bed rest, bowel prep, drainage tubes, catheters, and opioid-based pain management (Kain et al., 2006; Kehlet, 2008).

The Enhanced Recovery After Surgery (ERAS) program offers a patient-centered, evidence-based alternative, focusing on perioperative education, tailored anesthesia, minimally invasive techniques, early mobilization, reduced fasting, and selective drain use (Wilmore & Kehlet, 2001; Rafeeqi & Pearson, 2021). The implementation of ERAS for various surgical procedures in children continues to emerge. Studies have shown that there is a reduction in length of stay and accelerated rehabilitation after surgery when ERAS protocol is implemented (Rafeeqi et al., 2021; Su et al., 2023). The creation of the Inflammatory Bowel Disease Enhanced Recovery After Surgery (ERAS) pathway aims to standardize care, minimize opioid use, enhance infection prevention and wound healing, accelerate return of bowel function and oral intake, and shorten hospital stays.

Target Users

- Physicians (Anesthesiologists, Fellows)
- Surgeons (Pediatric General Surgery)
- Advanced Practice HealthCare Professionals (APRNs, PA-C)
- Nurses

Target Population

Inclusion Criteria

- Any patient > 4 years old undergoing elective surgery for Crohn's disease or ulcerative colitis
 - Laparoscopic ileocectomy

Core Principles of ERAS in Pediatric IBD (Perez & Raval, 2024; Rafeeqi & Pearson, 2021)

- **Preoperative Counseling:** Educates patients and families on ERAS, pain management, and recovery expectations.
- **Nutritional Support:** Includes a nutritional assessment and personalized support before or after surgery.
- **Modified Fasting:** Clear liquids allowed until 2 hours before anesthesia; solids until 6 hours prior.
- **Minimally Invasive Surgery:** Uses less invasive techniques than traditional surgery to reduce recovery time.
- **Early Mobilization:** Patients begin moving the day after surgery to support healing.
- **Early Feeding:** Oral intake resumes the evening of surgery or the next day, often with immune-supportive formulas.

Additional Questions Posed by the ERAS Committee

No clinical questions were posed for this review.

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Key Metrics To Be Monitored:

Pre-Op	Intra-Op		Post-Op
Carb-rich drink	Dexamethasone/ Ondansetron	Acetaminophen	PONV PACU score
	Regional Anesthesia	Ketorolac	Opioids
	Euvolemia	Avoidance of Long-Acting Opioids	Time to diet
	Antibiotics administered prior to incision	Normothermia	Length of stay

Value Implications

The following improvements may increase value by reducing healthcare costs and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and their families, as well as reducing costs and resource utilization for healthcare facilities.

- Decreased inpatient length of stay
- Decreased unwarranted variation in care
- Improved communication between patients and care team throughout the perioperative period
- Improved post-operative pain control

Organizational Barriers and Facilitators

Potential Barriers

- Variability of the acceptable level of risk among providers

Potential Facilitators

- Collaborative engagement across care continuum settings during ERAS development
- High rate of use of the ERAS pathway

Bias Awareness

Bias awareness is our aim to recognize social determinants of health and minimize healthcare disparities, acknowledging that our unconscious biases can contribute to these inequities

Order Sets

- There are no order sets associated with this ERAS pathway

Associated Policies

- There are no policies associated with this ERAS pathway

Education Materials

- ERAS overview handout
 - Intended to be a general handout encompassing the key concepts and plan for an ERAS pathway
 - Found on the CM external website for each ERAS pathway
 - Available in English and Spanish

ERAS Pathway Preparation

This pathway was prepared by the EBP Department in collaboration with the Inflammatory Bowel Disease ERAS Pathway Committee, composed of content experts at Children's Mercy Kansas City. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

Inflammatory Bowel Disease ERAS Committee Members and Representation

- Emily Weisberg, MD | Anesthesiology | Committee Chair
- Tolu Oyetunji, MD, MPH, MBA | Pediatric General Surgery | Committee Co-Chair

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- Shawn St. Peter, MD | Pediatric General Surgery | Committee Member
- Efua Bolouvi, MD | Pediatric General Surgery Fellow | Committee Member
- Nichole Doyle, MD, FASA, FAAP | Anesthesiology | Committee Member
- Christian Taylor, MD | Anesthesiology | Committee Member
- Gabriel Gallegos, MD | Anesthesiology | Committee Member
- Heather Sambol, RN, APRN | Anesthesiology | Committee Member

EBP Committee Members

- Todd Glenski, MD, MSHA, FASA | Anesthesiology, Evidence Based Practice
- Andrea Melanson, OTD, OTR/L | Evidence Based Practice

ERAS Development Funding

The development of this ERAS pathway was underwritten by the following departments/divisions: Anesthesiology, General Pediatric Surgery, and Evidence Based Practice.

Conflict of Interest

The contributors to the Inflammatory Bowel Disease ERAS Pathway have no conflicts of interest to disclose related to the subject matter or materials discussed.

Approval Process

- This pathway was reviewed and approved by the EBP Department and the Inflammatory Bowel Disease ERAS Committee, after the committee members garnered feedback from their respective divisions/departments.

Review Requested

Department/Unit	Date Obtained
Anesthesiology	October 2025
Pediatric General Surgery	October 2025
Evidence Based Practice	October 2025

Version History

Date	Comments
October 2025	Version one – creation of algorithm, synopsis, and supportive educational materials

Date for Next Review:

- **October 2028**

Implementation & Follow-Up

- Once approved, the ERAS pathway was presented to appropriate care teams and implemented.
- Key metrics will be assessed and shared with the appropriate care teams to determine if changes are needed.
- Pathways are reviewed every 3 years (or sooner) and updated as necessary within the EBP Department at CMKC. Pathway committees are involved with every review and update.

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the supporting documents that accompany the ERAS pathway.

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