



# Decreasing Length of Stay and Cost in Colorectal Surgery Using an Enhanced Recovery Program

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# Disclosures



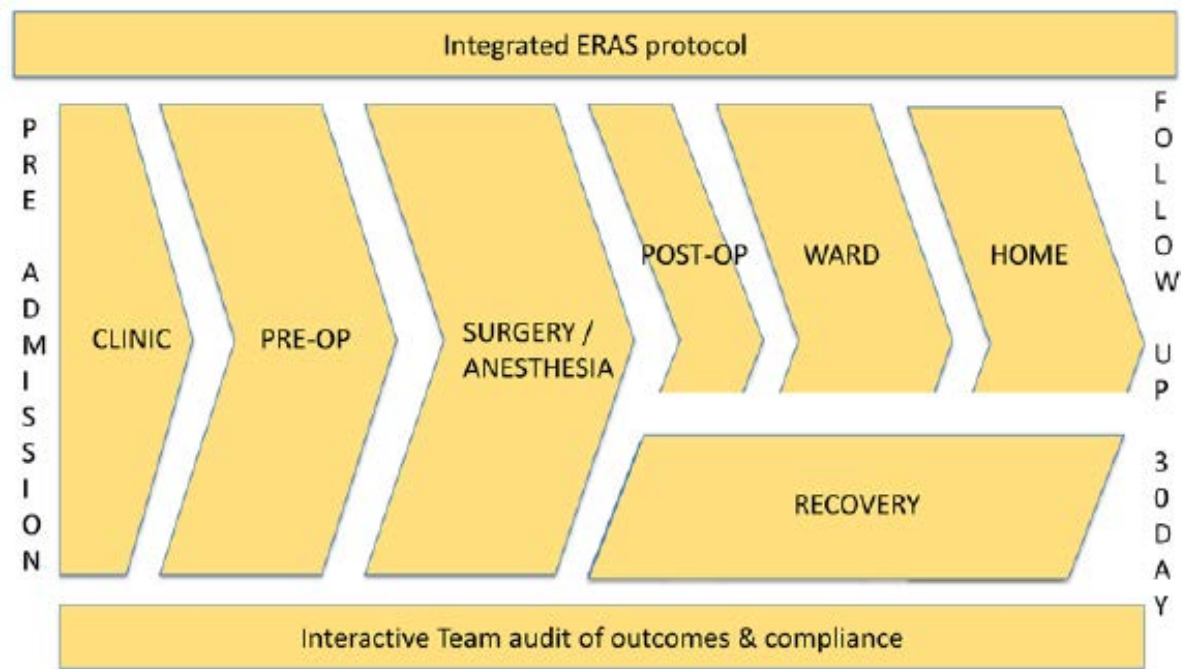
- No disclosures
- No funding



# Background



- Enhanced recovery after surgery (ERAS) pathways



- Evidence based best practice to reduce length of stay (LOS) and complications.
- No increases in readmission rates or mortality.



# Methods



- Four surgeons, patients undergoing bowel resection, starting Jan 1, 2015.
- 17 variables defined in The Enhanced Recovery Program in NSQIP (ERIN).
  - pre-operative, operative, and post-operative elements
- Aim: institute an ERAS program at EUH for colorectal surgery.
  - **Goals:**
    - **Decrease LOS by 1 day**
    - **Decrease complications by 20%.**



Surgeon	Anesthesia MD
Nurse	Scheduler/PCC

# ERAS orderset



POHA	OR
Colorectal "preoperative" ERAS orderset completed day before surgery	ERAS patient discussed during surgical time-out CTO
ERAS identification on patient chart	Bair Paws gown connected during induction
Sports drink early am	Upper body warmer used
PO Gabapentin, celecoxib, acetaminophen (if patient appropriate)	Temperature > 36.0 throughout case
SQ heparin 5000 units(if patient appropriate)	Fluid warmer used
PONV risk factor reviewed	OGT/NGT if used removed at the end of the case
Bair Paws gown applied	LR or Plasmalyte used
Chlorhexadine cleanse confirmed	Fluids less than or equal to 8 ml/kg/hr with blood loss replaced with colloid (5% Albumin)
PO antibiotics for mechanical bowel prep	Goal directed fluid monitor used(esophageal Doppler monitor or PPV with arterial line)
Stoma education provided (if appropriate)	Magnesium sulfate 2 gm IV after induction (> 10 min)
	Toradol 15mg or 30mg CrCl and age appropriate
	Narcotic sparing anesthetic
	Intraop TAP block per surgeon



# Emory ERAS Team



- **Colon and Rectal Surgery**
  - Drs. Shaffer, Srinivasan, Staley, and Sullivan
- **Anesthesiology**
  - Drs. Berry, Wolf
- **Emory Floor Nursing**
  - Melissa Gordon, Susan Tomlin
- **Anesthesiology Preoperative Nursing**
  - Rebecca Layson, Anne Bigelow, Angeline Butler
- **Operating Room Nursing**
  - Cheryl Castleberry, Kathy Galloway
- **Post Anesthesia Nursing**
  - Angeline Butler, Maquitha Mitchell
- **Clinic Nursing**
  - Nancy Findley, Shakira Johnson
- **Emory Administration**
  - Drs. John Sweeney, Greg Esper, Bill Bornstein
  - Tari Owi (Admin fellow)
  - Neha Sachdev
- **NSQIP**
  - Judy Lewis, Amy Newell
- **Medical Students**
  - Keon-Young Park, Martha Ingram, Lauren Perry, Liza Roger
- **Medical Illustrator**
  - Satyen Tripathi
- **Emory Office of Quality**
  - Sebastian Perez, William Knechtle



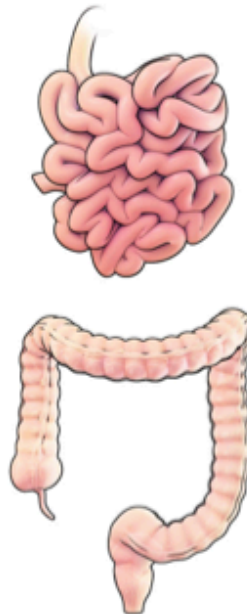
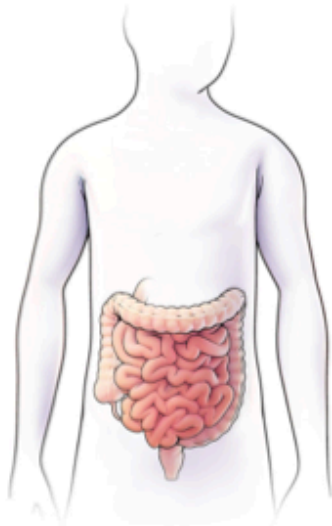
# Education



## The Purpose of Your Procedure

Your doctor will talk to you about having this procedure because you have a medical condition that is stopping a part of your bowel from working properly.

*Use the images below when discussing your procedure with your doctor.*



Small Bowel

Large Bowel  
(Colon)

Date of Surgery: \_\_\_\_\_

Arrival Time at the Hospital: \_\_\_\_\_

Scheduled Procedure Time: \_\_\_\_\_

Anticipated Days in Hospital: \_\_\_\_\_



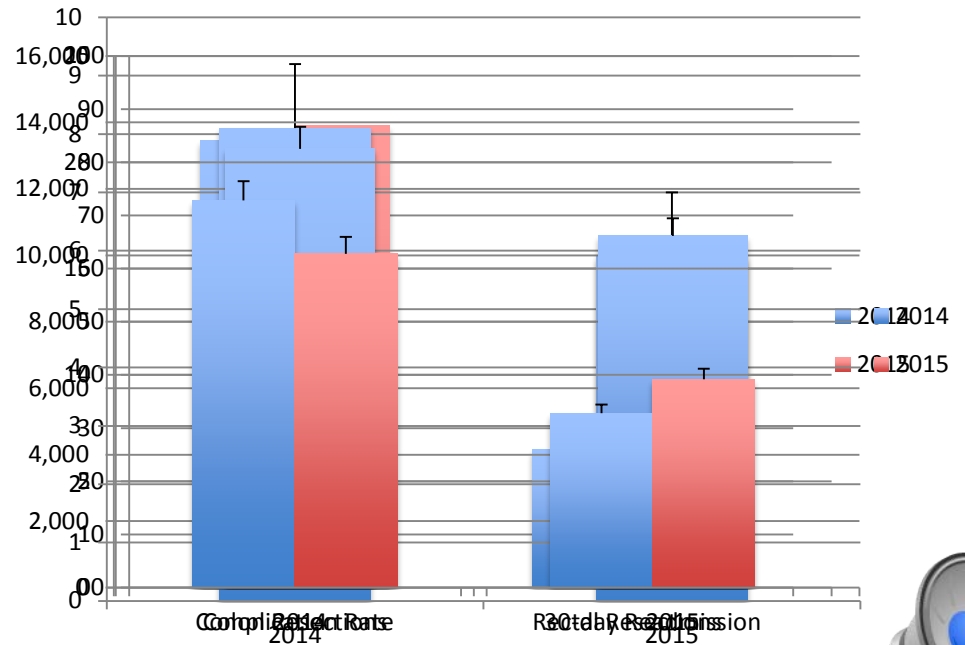



# Results



- Length of stay, complications, readmission, and direct variable cost were compared between years.
- A total of 102 patients undergoing elective colorectal surgery in the ERIN program were compared to 110 cases performed in 2014.

**Complication rate: 15.7% in 2015 compared to 18.2% in 2014** (colorectal resections (84 in 2014 and 87 in 2015) and rectal resections (26 in 2014 and 13 in 2015) decreased by average of 2.5 days from readmission rate of 9.8% in 2015 compared to 8.2% in 2014 (p= 0.68).





# Conclusion



- A defined 17 variable Enhanced Recovery Program through NSQIP (ERIN) can decrease LOS and cost without increasing the re-admission rate.
- **Keys for success:**
  - ✓ Decrease complications
  - ✓ Team based care
  - ✓ Ongoing assessment of improving adherence to continuous measurement of outcomes
  - ✓ ERIN variables
  - ✓ Checklist based patient care
  - ✓ Communication



# Thank you!

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