Enhanced RecoveryAfter Surgery

THE QUEEN'S MEDICAL CENTER

Pre Surgical Optimization and the Nurse Navigator Role

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9/26/2016

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Pre Surgery Center and Optimization

Our goal is to evaluate elective surgical patients with multiple co-morbidities and identify those who may be at high risk for poor surgical outcomes.

We assess their anesthesia, medical, and social risks, and with assistance from our multidisciplinary consultative team, we optimize the patients as best as possible prior to surgery.

Consultative Services may include:

- Cardiology
- Diabetes
- Pulmonology
- Dental
- Case Management/TCMP/Social Work
- Geriatrics
- Pain Management
- Advanced Care Planning

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Pre Surgery Center Optimization

Basic testing (labs, ECG, CXR) are done in Pre Surgery Center

Other diagnostic testing such as cardiac echocardiogram and nuclear stress test may be ordered & scheduled if warranted.

Patient education is done to help decrease anxiety about surgery or anesthesia as well as pre and post-op education

- To help prevent surgical complications such as NV-HAP and surgical site infection.
- For example, the importance of CDB/Incentive spirometry, early mobility.
- Oral and dental care instructions and dental referral if necessary.
- Hibiclens instructions for prior to surgery.

Patients are also given specific pre operative bowel prep instructions for the ERAS pathway.

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PRE-OP INSTRUCTIONS

Surgery Date: _____

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2 DAYS PRIOR TO SURGERY: Starting today, _____ please **DO NOT** shave or wax anywhere on your body.

1 DAY PRIOR TO SURGERY: _____ You can have a regular diet until **2:00 pm** today and take medications as instructed.

2:00 PM	3:00 PM	1 Hour After Having Clear Bowel Movement	3 Hours After Having Clear Bowel Movement	Bed Time
No more solid food. Start a clear liquid diet (any liquid you can see through). √ Water √ Clear broth: beef or chicken √ Gatorade √ Lemonade or Kool-Aid √ Soda, tea, coffee (no cream) √ Jell-O (without fruit) √ Popsicles √ Juices without pulp Please **NO RED** liquids.	Take ***Metoclopramide*** 10 mg (1st dose). Start drinking ***Golytely/ Nulytely*** bowel prep: •Drink as directed until your bowel movements are clear. •You can stop once it is clear. You do not need to finish the whole container.	Take: **Neomycin** 1 gm **and Metronidazole** 500 mg (1st dose of antibiotics).	Take: **Neomycin** 1 gm **and Metronidazole** 500 mg (2nd dose of antibiotics). Take ***Metoclopramide*** 10mg (2nd dose).	Take: **Neomycin** 1 gm **and Metronidazole** 500 mg (3rd dose of antibiotics). Take a shower and use Hibiclens cleansing packet or bottle. *(See next page for instructions).* 

DAY OF SURGERY: _____

- Take a shower again and use Hibiclens skin cleansing packet or bottle. *(See next page for instructions).*
- Take your morning medications as instructed: ***Metoclopramide*** 10 mg (3rd dose) &
- Drink Gatorade 20 oz Thirst Quencher G Series, start at: _____ to be finished by: _____
- **STOP all liquids** by: _____
- Check in at: _____ by: _____

HIBICLENS

Antiseptic / Antimicrobial Skin Cleanser

Please DO NOT shave or wax starting 2 days before surgery

EVENING BEFORE SURGERY:

- Wash your hair with regular shampoo
- Rinse your hair and body with water
- Shower from the neck down with ***Hibiclens*** soap
- **DO NOT use *Hibiclens* on face, hair or genitals**
- Rinse well
- Dry with a clean towel
- Put on clean clothes
- **DO NOT use lotions or creams**

MORNING OF SURGERY:

- Repeat the same steps as above
- Put on clean & comfortable clothes

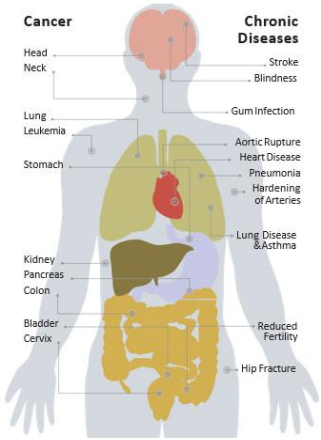
*Although rare, if you develop a rash or itchiness with this cleanser, rinse off with water right away and do not repeat wash.

GUIDE TO FEELING BETTER

	3 Hours After Surgery	Day 1 After Surgery	Day 2 After Surgery-Discharge	At Home
Pain Control	Pain medication by mouth. By injection only if needed.	Pain medication by mouth.	Pain medication by mouth.	Pain medication by mouth. Take as instructed.
Activity	Get out of bed and into chair. Walk.	Get out of bed when you eat. Walk at least 3 times in the hallway.	Sit in a chair when you eat. Walk farther. Walk more.	Activity as tolerated. No heavy lifting greater than 15lbs.
Breathing Exercises	Do your breathing exercises 10 times every hour while awake.	Do your breathing exercises 10 times every hour while awake.	Do your breathing exercises 10 times every hour while awake.	Do your breathing exercises 10 times every hour while awake until your activity level is back to normal.
Nutrition	You may have clear liquids starting in the recovery room.	Stay hydrated by drinking. You may also start eating soft, easy to digest food.	Stay hydrated by drinking. You may have solid food as tolerated.	Continue to eat and drink as tolerated. Eat solid food.
Other	• IV fluid • Urine Tube • Oxygen by mask for 6 hours *Tell your nurse and doctor if you pass gas or have a bowel movement	• Take out urine tube • Stop IV fluid *Tell your nurse and doctor if you pass gas or have a bowel movement	You may go home today if cleared by your doctor. Arrange for a ride home from the hospital.	Please call your doctor if you have questions.

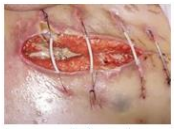
Smoking and Your Surgery

Smoking does a lot of bad things to your body



Healing is another thing that smoking hurts

A non-smoker's wound



A smoker's wound

When a wound opens up, it's called a deshiscence and it can happen after a day, a week, or longer. It is very important that you quit smoking as soon as you know you need surgery.

You're Not Alone

If you wish to quit tell your doctor or nurse. It's never too late to quit.
Hawaii Tobacco Quitline is one source to help you stop smoking.
Go to **HAWAIIQUITLINE.ORG** or call **1(800) QUIT NOW.**

HAWAII TOBACCO QUITLINE
1-800 QUIT-NOW

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APRN NURSE NAVIGATOR ROLE

- The APRN role is to serve as a liaison within the care team including the surgeon, anesthesiologist, primary care provider, as well as ancillary staff encountered to care for the patient along the continuum of the surgical encounter.
  - Notes from Pre Surgery appointment as well as a summary note on discharge will be sent to PCP
- Follow the patient post-operatively to ensure that pathway goals are met.
  - If goals are not being met, collaborate with necessary providers to return patient to pathway
- Ensure that follow-up arrangements for post-discharge are made with conjunction with case management.

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Perioperative Process

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9/26/2016

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Perioperative Process

THE QUEEN'S MEDICAL CENTER — Enhanced Recovery After Surgery (ERAS) Protocol Algorithm for Colorectal Cases

PREOP ASSESSMENT
- Referral to Pre-Surgery Center
- Patient Education on ERAS Protocol
- Nutritional Optimization
- Smoking Cessation
- Diabetes Control

DAY BEFORE SURGERY
- Regular Diet until 2 pm (Clear Liquid Diet thereafter)
- Start Mechanical and Oral Antibiotic Bowel Prep
  - Golytely
  - Metoclopramide 10 mg, 3 doses Q6H (first dose with Golytely)
  - Neomycin 1 gm and Metronidazole 500 mg or Erythromycin 500 mg, 3 doses
- Chlorhexidine Shower
  - Night Before Surgery
  - Morning of Surgery

DAY OF SURGERY
PRE-OPERATIVE:
- Clear liquids up to 3 hours prior to surgery (unless contraindicated), then NPO except meds
- Gatorade 20 oz Thirst Quencher G Series (3 hours prior to surgery)

PRE-OPERATIVE HOLDING AREA MEDS:

- **GI RECOVERY:**
  - Alvimopan (Entereg) 12 mg PO (contraindicated in chronic narcotic use or coronary artery disease)
- **PAIN MEDS:**
  - Celecoxib 200 mg PO (avoid in patients with coronary artery disease or if bowel anastomosis is planned)
  - Gabapentin 300-600 mg PO (300 mg if age greater than or equal to 65 years)
  - Acetaminophen 975 mg PO (15 mg/kg if less than 50 kg)
- **PONV:**
  - Scopolamine transdermal patch for 24 hours (if less than 65 years)
  - Aprepitant 40 mg PO (if at high risk for PONV)

- **ANTIBIOTICS:**
  - Cefazolin (start at 2 g if less than 100 kg, and 3 g if greater than 100 kg) + Metronidazole or
  - If Penicillin allergic, Ciprofloxacin + Metronidazole or Ciprofloxacin + Clindamycin
- **ANTICOAGULATION:**
  - Lovenox 40 mg SQ (unless neuraxial block is planned)

DAY OF SURGERY
INTRA-OPERATIVE:
- **BLOCKS (Open Surgery)**
  - Continuous Thoracic Epidural
  - Single Shot Spinal (0.2-0.3 mg of preservative free Morphine)
  - Continuous Transversus Abdominis Plane (TAP) Block – (bilateral)
  - Continuous Paravertebral Block (unilateral or bilateral)
- **BLOCKS (Laparoscopic Surgery)**
  - TAP Block (bilateral)
  - Single Shot Spinal (0.2-0.3 mg of preservative free Morphine)
  - Single Shot Paravertebral Block (bilateral)

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Perioperative Process

- **INTRAOPERATIVE MANAGEMENT (open or laparoscopic)**
- □ Heparin 5000 units SQ one hour after placement of neuraxial block
- □ Lidocaine (if regional was contraindicated or unsuccessful)
  - Bolus: 0.25-1.5 mg/kg 20 minutes prior to incision
  - Infusion: 0.25-1.5 mg/kg/hr
  Discontinue at the end of surgery
- □ Magnesium 30 mg/kg after induction
- □ Ketamine 0.1-0.5 mg/kg/hr after induction
  Discontinue at the end of surgery
- □ Dexamethasone 4 mg after induction
- □ Perioperative Goal Directed Therapy (PGDT) to maintain euvolemia
  - Edwards ClearSight or FloTrac
  - Masimo Pleth Variability Index (PVI)
- □ Minimize use of intraoperative opioids
- □ Hypothermia prevention (maintain greater than 36 Celsius core temperature)
- □ Avoidance of Nitrous Oxide
- □ Avoidance of drains and nasogastric tube
- □ Use separate clean fascial closure tray
- □ Ondansetron 4 mg at the end of surgery

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Postoperative Process

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9/26/2016

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Postoperative Protocol

POST OPERATIVE

- 80% FIO2 for 6 hours postop (Oxymask)
- Head of Bed elevated to 30 degrees at all times

- **DIET:**
- Clear liquid diet immediately (unless at risk for aspiration)
- Regular diet on POD #1

- **FLUIDS:**
- IV 40 ml/hr for 24 hours, then discontinue IV
- NO IV boluses for low UOP without hypotension or tachycardia

- **ANTIBIOTICS (if indicated):**
- Cefazolin + Metronidazole or
- Ciprofloxacin + Metronidazole or Ciprofloxacin + Clindamycin (if Penicillin allergic)

- **GI MOTILITY:**
- Alvimopan (Entereg) 12 mg BID for 7 days (contraindicated in chronic narcotic use or coronary artery disease)
- Magnesium Oxide 400 mg PO daily

- **PAIN:**
- Acetaminophen 975 mg PO or 1 gm IV (15 mg/kg if less than 50 kg) Q 6-8 H x 3 days, then PRN
- Celecoxib 100 mg PO BID (avoid in patients with coronary artery disease or bowel anastomosis)
- Gabapentin 300 mg QHS
- Oxycodone
  - 5 mg PO Q4H PRN MILD Pain
  - 10 mg PO Q4H PRN MODERATE Pain
  - 15 mg PO Q4H PRN SEVERE Pain
- Consider IV opioid rescue if no regional block

- **PONV:**
- Ondansetron 8 mg PO or 4 mg IV Q6H PRN
- Promethazine 12.5-25 mg PO or 6.25-12.5 mg IV Q4-6H PRN

- **ACTIVITY:**
- Ambulate within 3 hours of surgery
- Incentive Spirometry
- Coughing and Deep Breathing

DISCHARGE

PAIN MANAGEMENT:

- Acetaminophen 975 mg PO Q 6-8 H (15 mg/kg if less than 50 kg) for 1 week
- Gabapentin 300 mg PO QHS for 1 week
- Oxycodone 5 mg PO Q4H PRN

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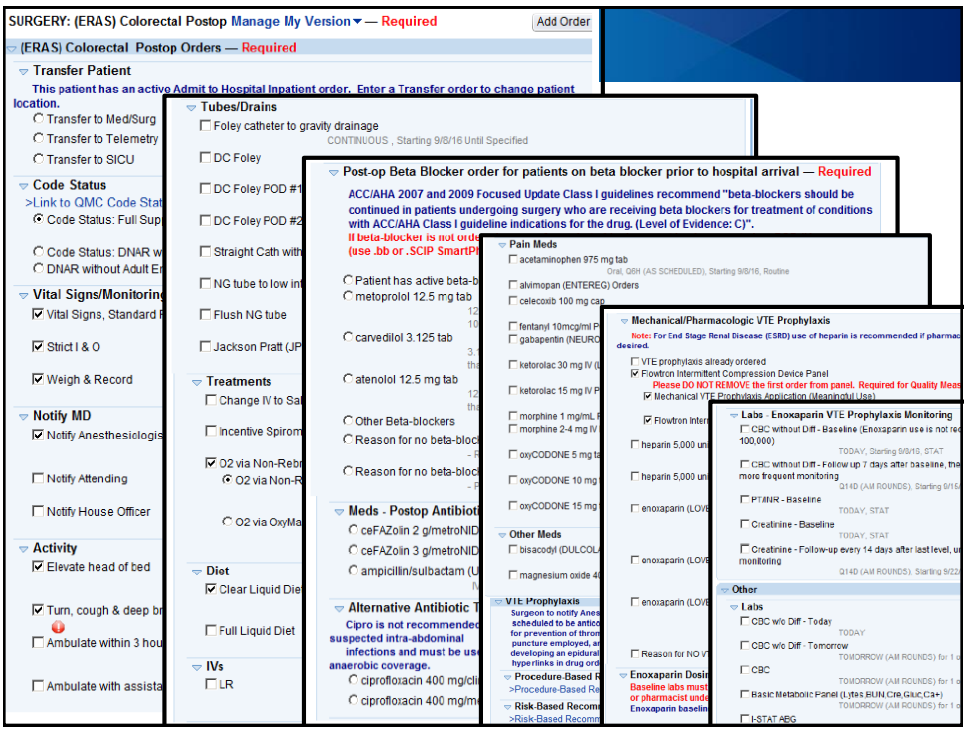

Results

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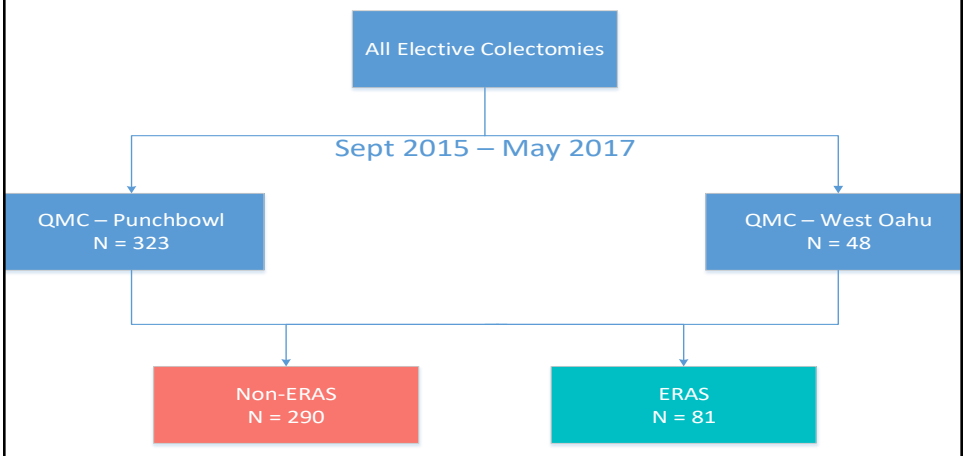
ERAS at Queen's Health Systems



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ERAS Demographics

	ERAS	Non-ERAS
Cases	81	290
Age	64.7 ± 13.8	60.2 ± 14.1
Gender, Female	41 (51%)	144 (50%)
Laparoscopy	53 (67%)	97 (34%)
ASA Score 3 or Above	49 (60%)	173 (60%)
Charleson/Deyo Risk Score 3 or Above	60 (74%)	230 (79%)

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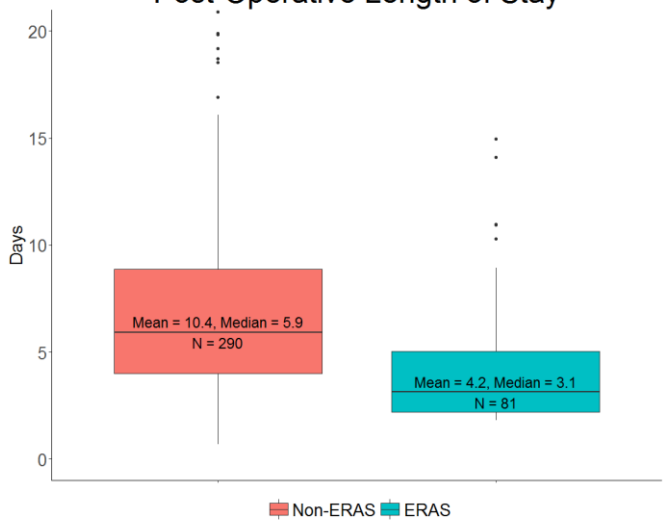
Post-Operative Length of Stay



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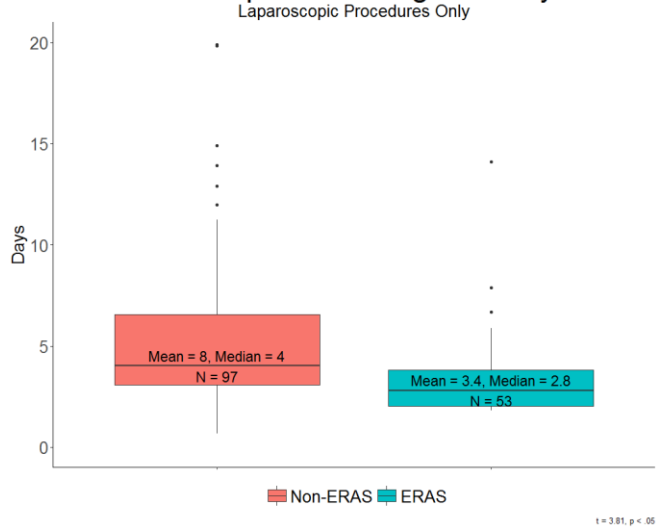
Post-Operative Length of Stay

Laparoscopic Procedures Only



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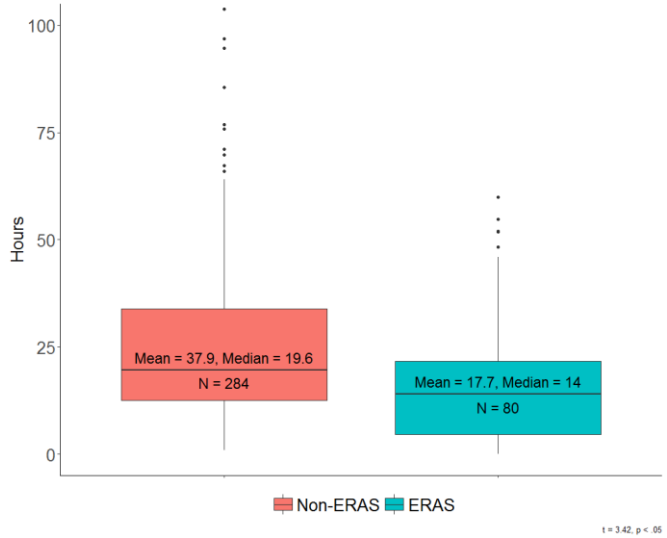
Time to First Ambulation



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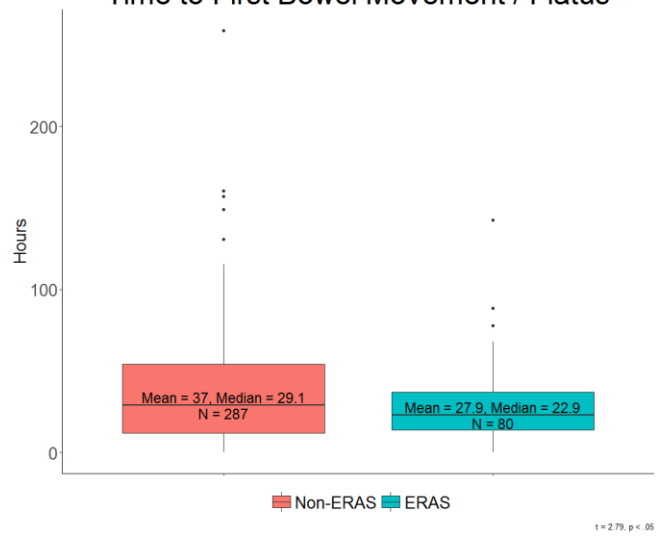
Time to First Bowel Movement / Flatus



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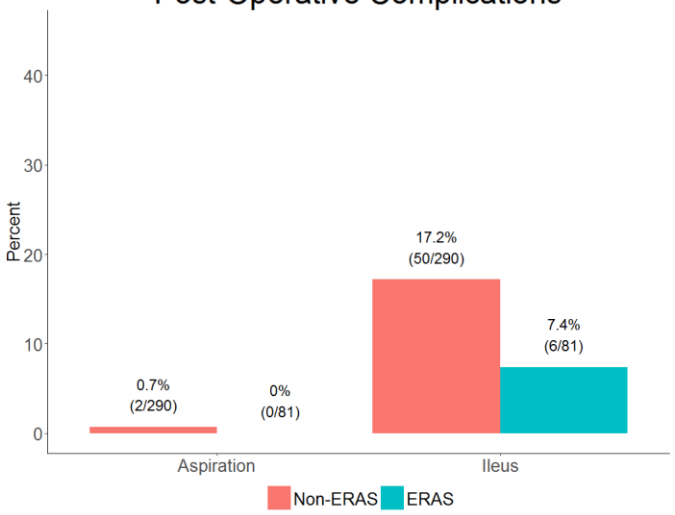
Percent of Cases with Post-Operative Complications



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Next Steps

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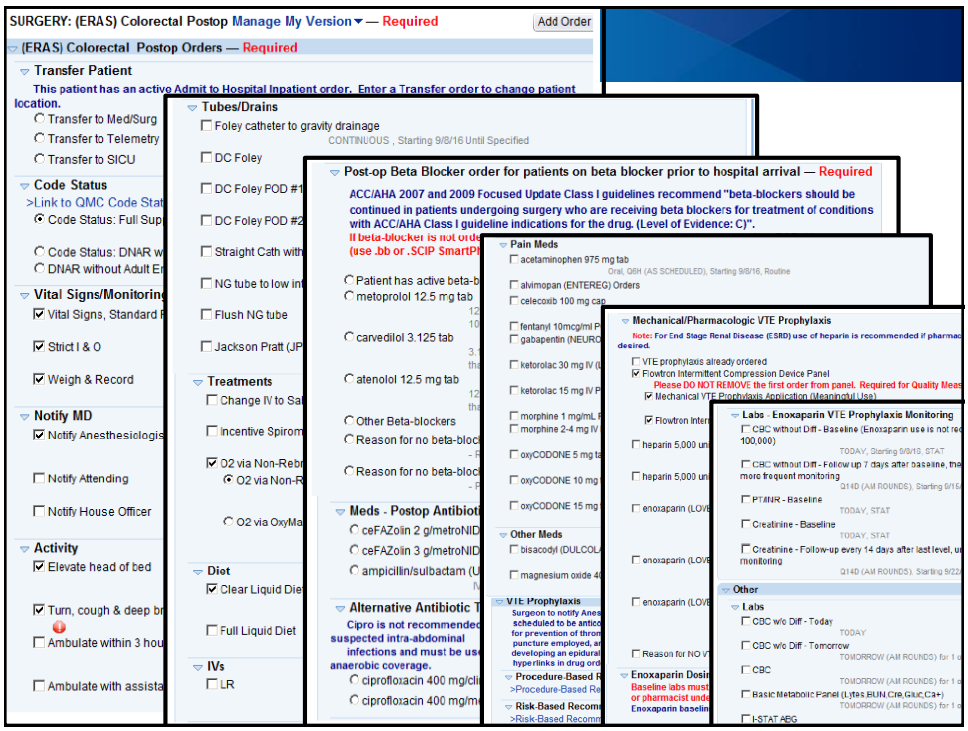
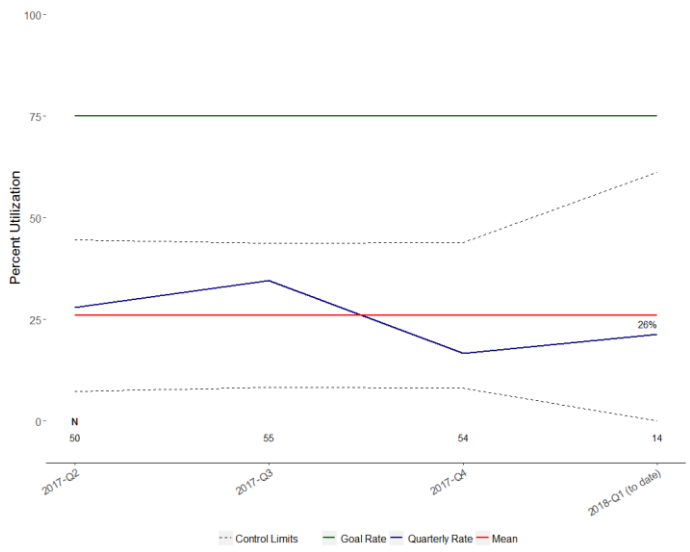


P-Chart of ERAS Protocol Order Set Usage



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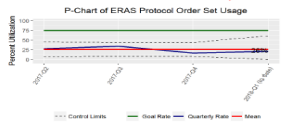
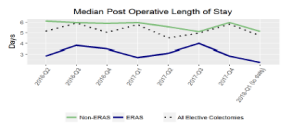
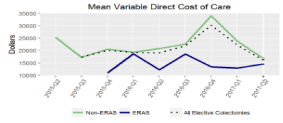
ERAS Dashboard

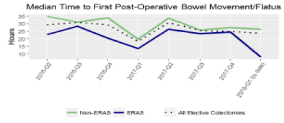
Aim Statement: Increase Orderset Use to to 75% by 12/31/2017



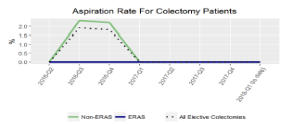
Outcome Metrics

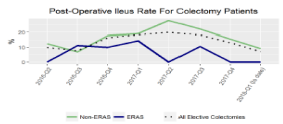






Balance Metrics





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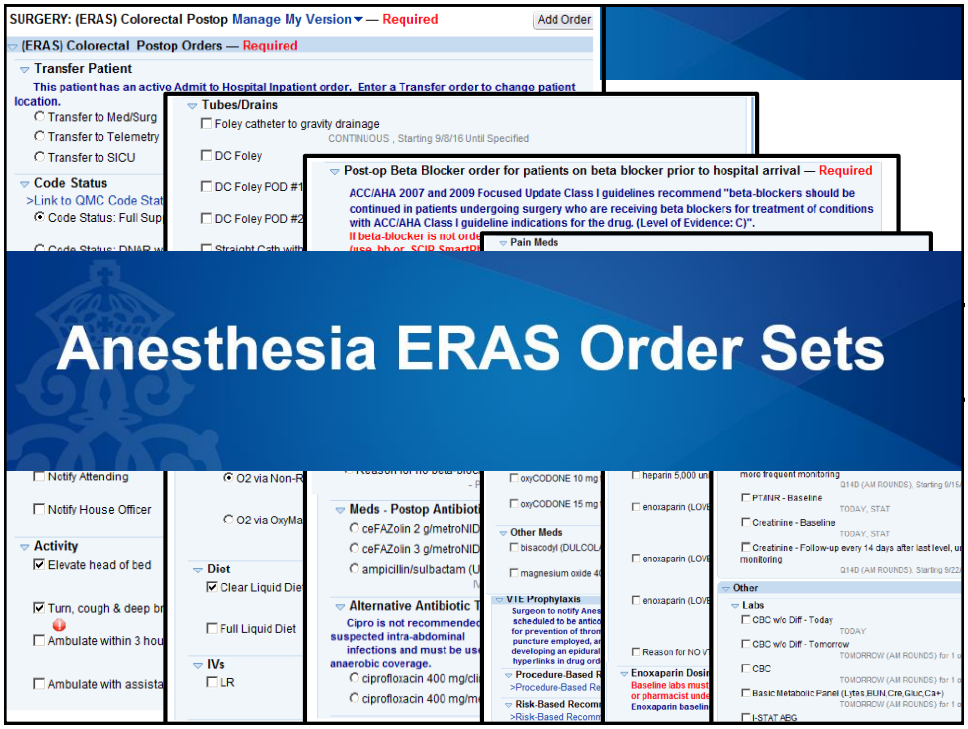

Mahalo!

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