Scheduling:

- Schedule patient as an ERAS patient on the scheduling form. Place in the comment section on scheduling form.
- Submit a completed ERAS order sheet to scheduling, or Presurgical Evaluation (PSE)

Orders:

- Fax ERAS Order Sheet to Scripps Retail Pharmacy if patient is picking up supplies and medications at Scripps Retail Pharmacy
  And
- Fax ERAS Order Sheet to PSE (You will always fax order sheet to PSE regardless).

Supplies:

- MD offices can have the carbohydrate drink and CHG wipes at their offices to provide to the patient at the time of the office preop visit.
- MD offices can also send patients to one of the Scripps Retail Pharmacy locations to pick up supplies, or bowel prep, or medications to include antibiotics if MD orders.
- If patient has a PSE appointment the patient can receive the CHG wipes and Carbohydrate drink supplies at the PSE appointment.
- Supplies will be available at Scripps Clinic MD offices, Scripps Retail Pharmacy locations, and PSE units.

Educate the patient:

- Education begins at the office, and is one of the most important elements to the ERAS program, please go over the ERAS brochure and the Surgical Site Infection Prevention handout.
- Other educational handouts correspond to carbohydrate drink (Clearfast) and CHG wipes-PSE or pharmacy can provide these to the patient. MD office may provide as a pre-educational tool. Provide patient with 3 – 12 oz. drinks and 2 packages of wipes – 12 cloths total. 6 cloths for the night before and 6 cloths for the morning prior to coming in for surgery.
- Handout for SSI prevention is necessary to go over with the patient. This will help patient understand the importance and how to prevent a surgical site infection.
- *Patients who are diabetic or have delayed gastric emptying will not receive Clearfast
- *Patients who are allergic to corn, Stevia or watermelon should not receive Clearfast
### GENERAL SURGERY

<table>
<thead>
<tr>
<th>Procedure Description</th>
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<tr>
<td>Abdominal Mass Resection with Anticipated Bowel Resection</td>
<td>Colectomy Total with Robot Assist</td>
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<tr>
<td>Abdominal Perineal Resection (Miles Resection)</td>
<td>Colo-Anal Resection Laparoscopic with Diverting Loop Ileostomy</td>
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<tr>
<td>Abdominal Perineal Resection Laparoscopic</td>
<td>Colectomy Closure (Hartmann Reversal)</td>
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<tr>
<td>Abdominal Perineal Resection with Robot Assist</td>
<td>Colectomy Takedown</td>
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<tr>
<td>Bowel Resection Small</td>
<td>Colectomy Reversal</td>
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<tr>
<td>Colectomy Left/Sigmoid/low anterior (open)</td>
<td>Colectomy Reversal, Low Anterior Anastomosis</td>
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<tr>
<td>Colectomy Left/sigmoid/low anterior Robot Assist</td>
<td>Ostoctomy Takedown Laparoscopic</td>
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<td>Colectomy Left/sigmoid/low anterior laparoscopic</td>
<td>Esophagectomy</td>
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<td>Colectomy Partial</td>
<td>Ileal conduit</td>
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<tr>
<td>Colectomy Partial with Colectomy</td>
<td>Laparotomy Exploratory with Bowel Resection</td>
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<td>Colectomy Partial with Robot Assist</td>
<td>Proctocolectomy Laparoscopic</td>
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<td>Colectomy Right (open)</td>
<td>Proctocolectomy Restorative</td>
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<td>Colectomy Right Laparoscopic</td>
<td>Proctocolectomy Total, Ileoanal J Pouch, Diverting Loop Ileostomy Proctocolectomy</td>
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<td>Colectomy Right Laparoscopic</td>
<td>Total, Ileoanal J Pouch, Diverting Loop Ileostomy Laparoscopic Proctoplasty</td>
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<td>Colectomy Total</td>
<td>Proctostomy</td>
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### GYNECOLOGICAL SURGERY

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<th>Procedure Description</th>
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<tr>
<td>Hysterectomy Abdominal Total (TAH)</td>
<td>Hysterectomy With Robot Assist</td>
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<tr>
<td>Hysterectomy Laparoscopic Supracervical</td>
<td>Laparotomy Exploratory (Gyn)</td>
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<tr>
<td>Hysterectomy Laparoscopic Supracervical with Bilateral Salpingo-Oophorectomy</td>
<td>Laparotomy Exploratory with Ectopic Pregnancy Excision</td>
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<td>Hysterectomy Laparoscopic Total</td>
<td>Laparotomy Exploratory with Lysis of Adhesions</td>
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<td>Hysterectomy Laparoscopic Total with Bilateral Salpingo-Oophorectomy</td>
<td>Hysterectomy Total Abdominal with Bilateral Salpingo-Oophorectomy Hysterectomy Vaginal</td>
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<tr>
<td>Hysterectomy Radical</td>
<td>Hysterectomy Vaginal Total Laparoscopic (LAVH)</td>
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<tr>
<td>Hysterectomy Radical with Robot Assist</td>
<td>Hysterectomy Vaginal Total Laparoscopic with Bilateral Salpingo-Oophorectomy</td>
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<td>Hysterectomy Radical with Robot Assist using Xi</td>
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Orders preceded with a box must be checked to activate. All other orders are effective unless modified. Complete blanks to specify information not predefined. Initial each modification made to the order set, e.g., additions, deletions, strikeouts. Initial each internal page in bottom right corner. Statements in italics represent decision support for providers completing the order set; these statements are not part of the physician order(s). Provide corporate identification, sign, date and time last page.

**PRE-ADMIT PHASE OF CARE**

**Diet**
- Provide patient with three 12 ounce bottles of Clearfast® to drink at specified times.
- Special Diet Instructions: Clearfast® beverage for non-diabetic patients

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**Medications**
- Chlorhexidine gluconate 2% cloth: Use 3 packages 1 application per area single dose night before surgery apply cloths to each area of skin after evening shower/bath (See Instructions).
- Selection of preoperative antibiotic regimen should consider allergy or intolerance (such as nausea and vomiting) of erythromycin, neomycin, and/or metronidazole

**Erythromycin & Neomycin - Day Before Procedure:**
- Erythromycin base (Ery-Tab) 1 gm PLUS Neomycin sulfate 1 gm
  - Give both antibiotics orally 3 times per day at 1pm, 2pm and 10pm the day before surgery

**Or**

**MetroNIDAZOLE (FLAGYL) & Neomycin - Day Before Procedure:**
- Metronidazole (Flagyl) 500 mg PLUS Neomycin sulfate 1 gm
  - Give both antibiotics orally 3 times per day at 1pm, 2pm and 10pm the day before surgery

**Bowel Prep Products:**
- PEG-electrolytes solution (equivalent to GOLytely)_________(Dose) orally single dose starting day before surgery (Indication: bowel prep)
- PEG-electrolyte solution (provided by provider during pre-op visit)__________(Dose) orally single dose starting day before surgery (Indication: bowel prep)

**PRE-OP (DAY OF) PHASE OF CARE**
- POCT glucose

**Medications**
- Chlorhexidine gluconate 2% cloth: Use 3 packages 1 application per area single dose in Pre-Op.
- **Analgesics:**
  - Gabapentin (NEURONTIN) 300mg orally single dose in Pre-Op
  - Acetaminophen 1gm orally single dose in Pre-Op
  - Celecoxib (CELEBREX) 200 mg orally single dose in Pre-op
  - Celecoxib (CELEBREX) 400mg orally single dose in Pre-op

*Use only for Open or Laparoscopic procedures of the small and large intestines. Contraindicated for patients who have taken therapeutic doses of opioids for more than 7 consecutive days immediately prior to Alvimopan.*

- Alvimopan (ENTEREG) 12 mg PO x1 in Pre-op

Please send comments and recommended improvements to: MedicalMgmtCouncil@scrippshealth.org
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Diet
- Clear liquid diet: Start clear liquids on day of surgery, hold clear liquid tray if is patient nauseated and NOTIFY MD. Patient may receive clear liquids in PACU

Activity
- Ambulate patient: To start on the day of surgery
- Sit for all meals
- Walk 1-2 times on the day of surgery
- General surgery procedures
  - Out of bed for 180 minutes on POD #1, 2, 3 and thereafter
  - Out of bed for 240 minutes on POD #1, 2, 3 and thereafter
  - Out of bed for 360 minutes on POD #1, 2, 3 and thereafter
- Gynecological surgery procedures
  - Ambulate patient starting POD# 1 at least 4 times daily

Wound Care
- Daily chlorhexidine wash to wounds without Dermabond
- Change dressing if wet, even if before POD #2

Urinary
- Insert urinary catheter to straight drainage (utilize foley securement device)
  - Discontinue POD #1
  - Discontinue POD #2
  - Bladder scan if unable to void every 6 hours. If bladder scan is greater than 400 mL, then perform straight catheterization. Reinsert urinary catheter if urine output less than 0.5mL/kg/hr or if second straight catheterization is required and NOTIFY MD

IV
- Judicious use of postoperative IV fluids
  - IV D5 1/2 NS with 20mEq KCl at _______mL/hr
  - IV D5 1/2 NS at _______mL/hr
- Saline lock IVF:
  - 6 hours after arrival to the floor
  - 8 hours after arrival to the floor
  - Per MD specific criteria: __________________________
Medications

• Multimodal approach to postoperative pain management with goal of reducing narcotic usage

Scheduled Analgesia:

☐ Acetaminophen
  ☐ 650 mg PO every 6 hours
  ☐ 1 gm PO every 6 hours

☐ Gabapentin (NEURONTIN) 300 mg PO every 8 hours

☐ Celecoxib (CELEBREX)
  ☐ 200 mg PO every 12 hours
  ☐ 400 mg PO every 12 hours

Oral Opioid Medications:

☐ Tramadol (ULTRAM) 50 mg PO every 4 hrs PRN mild pain (try before Oxycodone)

☐ Tramadol (ULTRAM) 100 mg PO every 4 hrs PRN moderate pain (try before Oxycodone)

☐ oxyCODONE (ROXICODONE) 5 mg PO every 4 hrs PRN moderate pain

☐ oxyCODONE (ROXICODONE) 10 mg PO every 4 hours PRN severe pain

Additional Medications:

• Contraindicated for patients who have taken therapeutic doses of opioids for more than 7 consecutive days immediately prior to Alvimopan

☐ Alvimopan (ENTEREG) 12 mg PO BID; start in AM on POD #1 for 14 doses or as soon as return of bowel function

Please send comments and recommended improvements to: MedicalMgmtCouncil@scrippshealth.org
ERAS SUMMARY

Why ERAS? ERAS refers to patient-centered, evidence-based, multidisciplinary team developed pathways to reduce the patient's surgical stress response, optimize their physiologic function, and facilitate recovery. Implementation and compliance with patient appropriate elements of a comprehensive pathway across the entire perioperative continuum have been shown to improve outcomes.

Some of the key elements of ERAS include patient/family education, patient optimization prior to admission, minimal fasting that includes a carbohydrate beverage 2 hours before anesthesia, multimodal analgesia with appropriate use of opioids when indicated, return to normal diet and activities the day of surgery, and return home.

ERAS Patient Care Literature Support

- **Preoperative Counseling** - Preoperative counselling targeting expectations about surgical and anaesthetic procedures may diminish fear and anxiety and enhance postoperative recovery and discharge [Carli et al., 2009, Halazynski, 2004, Stergiopoulov et al., 2007].

- **Carbohydrate beverage** - By providing a clear fluid containing a defined (12 %) concentration of complex carbohydrates up until 2 h before anesthesia, patients can undergo surgery in a metabolically fed state [Ngyren, 2006].

- **2% CHG Bathing** - Recommends alcohol-based antiseptic solutions based on CHG for surgical site skin preparation in patient undergoing surgical procedures” (WHO).

- **Correct antibiotic usage** - Prophylactic antibiotics are effective against aerobes and anaerobes; they have been shown to reduce the prevalence of infectious complications in colorectal surgery [Bratzler & Houck, 2004, Nelson & Glenny, 2009].

- **Multimodal Pain Management** - Multimodal analgesia with paracetamol (acetaminophen) and non-steroidal anti-inflammatory drugs (NSAIDs) has been shown to spare opioid use and side effects by 30 %.

- **Targeted use of IV fluids** - During surgery, fluid delivery should be targeted against physiological measures [Zmora et al., 2010]

- **Reduce use of Opioids** - Multimodal analgesia with paracetamol (acetaminophen) and non-steroidal anti-inflammatory drugs (NSAIDs) has been shown to spare opioid use and side effects by 30%. Cyclo-oxygenase (Cox)-2 inhibitors can be used safely in conjunction with epidural anaesthesia.(Nygren et al., 2012).

- **Early nutrition** - It has been well established that any delay in the resumption of normal oral diet after major surgery is associated with increased rates of infectious complications and delayed recovery [Andersen, 2006].

- **Early ambulation** - Encouraging postoperative early mobilization is important to avoid patient discomfort (pain and ileus) because patients must be adequately nursed, keeping their independence as much as possible. Patients should be out of bed 2 h on the day of surgery, and 6 h per day until hospital discharge [Soop et al., 2004].

- **Diabetes Management** - Maintenance of perioperative blood sugar levels within an expert-defined range results in better outcomes. Several stress reducing interventions in ERAS attenuate insulin resistance as single interventions, including preoperative oral carbohydrate treatment [Ngyren et al., 1998], epidural blockade [Latterman et al., 2003, Uchida et al., 1988] and minimally invasive surgery [Ngyren et al., 1996].
NOTE: The goal is to achieve a standard and reproducible pathway for patients undergoing intestinal surgery/hysterectomy and those providing such care that can be applied across the system encompassing all phases of care. Specifically the initial visit, the pre-op assessment visit, peri-operative, post-operative, and post discharge care.

Individual preferences (such as bowel prep or not, wound irrigation, rate of advancement of diet) where clear data as to best practice is lacking are acceptable.

- **Pre-op Assessment (pre-surgical evaluation) & patient floors to Include the Following:**
  - Provide CHG wipes for patient use the night before surgery
  - Provide carbohydrate drinks (Three 12 oz. Clear fast MD) for consumption prior to surgery (see instruction sheet)
  - Educate on Early Mobilization – starting on day of surgery
  - Educate on Pain Management – expectations, including the avoidance of opioids
  - Educate NPO Guidelines – anesthesiologists agreed to new standards (details included in this packet)
  - Educate on diet progression/expectations
  - Diabetic education sheet – Pre-Operative Protocol for Patient with Diabetes

- **Pre-op – by 12pm the day before surgery:**
  - General Surgery - Mechanical bowel prep (optional at surgeon preference) followed by oral Neomycin + Erythromycin or Metronidazole at recommended doses and dosing intervals
  - GYN Surgery – Consider rectal enema if rectosigmoid resection is anticipated

- **Pre-op holding area to Include the Following:**
  - CHG wipes-in Pre-op or patient floors
  - Keep core temperature >36/ use Bair Hugger/forced warm air gown
  - Educate patients again on expectations during and after surgery, including SSI prevention
  - Check that blood glucose is <180. Notify Anesthesia if out of range
  - Administer oral medications per surgeon preference
    - Acetaminophen, Gabapentin, Celecoxib

- **Intra-op to Include the Following:**
  - Monitor blood glucose in diabetics
  - General Surgery - IV antibiotics within 30-60 minutes before start:
    - Cefazolin (re-dose at 4 hours) + Metronidazole (no re-dose)
    - Cefoxitin (re-dose at 2 hours)
    - Alternative regimen (if allergy)
  - Clindamycin (re-dose at 6 hours)/Gentamicin (no re-dose)
Clinical Pathway Guideline for SSI Prevention and ERAS
General and Gynecological Surgery

- General Surgery - IV antibiotics within 60-120 minutes of start:
  - Vancomycin
- GYN Surgery - IV antibiotics within 30-60 minutes before start:
  - Cefazolin (re-dose at 4 hours)

- Alternative regimen (if pelvic mesh or bowel surgery)
  - Cefazolin (re-dose at 4 hours) + Metronidazole (no re-dose)
  - Cefoxitin (re-dose at 2 hours)
    - Alternative regimen (if PCN allergy)
      - Clindamycin (re-dose at 6 hours)/Gentamicin (no re-dose)

- Maintain body temperature >36
- Goal oriented administration of IV fluids
- Prep:
  - Use Chloraprep to prep the abdomen.
  - If ostomy, betadine just on ostomy then Chloraprep over the remainder of the abdomen
  - Betadine to perineum (at discretion of the surgeon for colorectal cases)
- General Surgery – recommend use of wound protectors & closure Tray
- Avoid routine use of NG or drains (unless specific concerns)
- Consider double glove and gloves change if case >3 hours or contamination

- Use Closure Tray:
  - Closure tray should be opened and counted before contamination and closure of the surgical wound begins. Tray is to be kept clean and separate from the other instruments and only used at the end of the surgery for closure of the surgical wound.
  - Change to colorectal closure tray for all colon, and hysterectomy cases (Laparoscopic and Exploratory Laparotomy included) and “contaminated abdominal cases”.
  - After the anastomosis is complete, remove all dirty items from the sterile field
  - All scrubbed personnel must change gowns and gloves before surgical wound closure begins.
  - Obtain new electrocautery, suction tubing, tip, and light handles, pre-prepared mayo stand with instruments, closing sutures, laps, and towels.
  - Perform first closing count including the instruments, used before closure, and soft items.
  - Place 4 towels around the surgical site.
  - The final count must include the closure tray and all soft items.

- Make sure wound classification is correct, documented and relayed to room nurse
- Consider wound irrigation with antibiotics or CHG solution (Irisept)
- Consider TAP blocks for post op analgesia
Clinical Pathway Guideline for SSI Prevention and ERAS

General and Gynecological Surgery

- Post-op to Include the Following

  - Antibiotic prophylaxis pharmacy recommendations beyond completion of surgical procedure
  - Consider no post op antibiotics if uncomplicated case
  - Wound care:
    - Daily chlorhexidine wash to wounds without glue
    - Change dressing if wet, even if before POD 2
    - Aseptic technique
  - Ambulating:
    - Sit for all meals
    - Walk 1-2 times on day of surgery
    - General Surgery
  - 180/240/360 min OOB on POD’s 1/2/3 and thereafter
    - GYN Surgery
  - Sit for all meals
  - Walk 1-2 times on day of surgery
  - POD 1 and later, ambulate at least 4 times daily

  - Start clear liquids on day of surgery. Encourage diet advancement per surgeon preference, educate as to sensible post op oral intake (hold clear liquid tray if patient nauseated).
  - Multimodal approach to post op pain management with goal of reducing opioid usage
  - Goal oriented use of post op iv fluids
  - Remove urinary catheter as early as possible, unless a specific or specified and documented reason
  - Post-op education handout regarding recognizing signs of SSI, proper hand hygiene, and ambulating expectations
  - Ongoing coaching and encouraging to meet activity/dietary goals
  - Post-op nurse phone call