





# UR Medicine Colorectal Surgery Enhanced Recovery (ERAS): Staff Reference

	Pre-Hospital	Pre-op: DOS	Post-op: Day 0	Post-op: Day 1	Post-op: Day 2 & Beyond
<b>Preparation: Stress Response Reduction</b>	<p><u>Pre-op H&amp;P:</u></p> <ul style="list-style-type: none"> <li>❖ Ostomy Nurse consult/skin marking for ostomies</li> <li>❖ Review Enhanced Recovery materials</li> <li>❖ Invite to join Twistle®: interactive patient engagement tool (<b>per CRS Team</b>)</li> </ul> <p><u>Day before surgery:</u></p> <ul style="list-style-type: none"> <li>❖ Regular diet until 2 pm; Clear liquids after bowel prep finished</li> <li>❖ Begin Miralax &amp; Gatorade/G2 @ 2 pm; bisacodyl @ 6 pm</li> <li>❖ Oral antibiotics @ 12, 1, &amp; 8 pm</li> <li>❖ Carbohydrate loading (non-diabetics): Drink 16 oz. apple juice before bed</li> </ul>	<ul style="list-style-type: none"> <li>❖ Carbohydrate loading (non-diabetics): Drink 8 oz. apple juice 2 hours before SSC arrival</li> <li>❖ Patient to bring &amp; review Enhanced Recovery information &amp; activity log prior to surgery</li> <li>❖ Follow Perioperative Glucose Management &amp; Normothermia protocols</li> </ul>	<ul style="list-style-type: none"> <li>❖ Review Enhanced Recovery protocol with patient</li> <li>❖ Encourage daily use of activity journals at bedside</li> <li>❖ Reinforce LOS target</li> <li>❖ Follow Perioperative Glucose Management protocol</li> </ul>	<ul style="list-style-type: none"> <li>❖ Continue to education re: Enhanced Recovery protocol daily + prn</li> <li>❖ Reinforce use of bedside daily activity journals</li> <li>❖ Review LOS target daily</li> <li>❖ Continue Perioperative Glucose Management protocol</li> </ul>	 <p>Continue until discharge</p>
<b>ERAS Medications</b>	<p><u>5 days before surgery:</u></p> <ul style="list-style-type: none"> <li>❖ Stop aspirin, warfarin, clopidogrel, heparin, &amp; NSAIDS</li> </ul> <p><u>3 days before surgery:</u></p> <ul style="list-style-type: none"> <li>❖ Stop apixaban &amp; dabigatran</li> <li>❖ Other anti-coagulants managed individually</li> </ul> <p><u>Day before surgery:</u></p> <ul style="list-style-type: none"> <li>❖ ERAS mechanical bowel preparation and oral antibiotics as noted above</li> <li>❖ Promethazine 12.5 mg or 25 mg prn also prescribed for nausea during bowel preparation.</li> </ul>	<p><u>Administer 1 dose each:</u></p> <ul style="list-style-type: none"> <li>❖ Acetaminophen 1000 mg orally</li> <li>❖ Alvimopan 12 mg orally</li> <li>❖ Celecoxib 400 mg orally</li> <li>❖ Ertapenem 1 gram IV</li> <li>❖ Pregabalin 75 mg orally</li> <li>❖ Enoxaparin 40 mg SQ</li> </ul> <p><u>Medication notes:</u></p> <ul style="list-style-type: none"> <li>❖ <b>1<sup>st</sup> cases- ALL</b> medication to be taken with <i>sips</i> of water once admitted to SSC</li> <li>❖ Later cases- <b>Acetaminophen</b> to be given in Pre-An</li> <li>❖ Medication adjustments prn based on renal &amp; hepatic function &amp; with alvimopan contraindications</li> </ul>	<p><u>Ileus prophylaxis:</u></p> <ul style="list-style-type: none"> <li>❖ Begin BID alvimopan dosing (<i>max</i> 14 doses postoperatively)</li> </ul> <p><u>Multimodal analgesia:</u></p> <ul style="list-style-type: none"> <li>❖ Acetaminophen 1 gram IV/orally q 8 hrs. around the clock</li> <li>❖ Pregabalin 75 mg orally q 12 hrs.</li> <li>❖ Ketorolac 15 mg IV q 6 hrs. x 4 doses</li> </ul> <p><b>Note:</b> analgesia dosing may be adjusted based on renal &amp; hepatic function</p> <ul style="list-style-type: none"> <li>❖ <b>Minimize opioids- VAS score 4-7/10:</b> oxycodone 5 mg orally. <b>VAS score 8-10/10:</b> oxycodone 10 mg. Morphine 2 mg IV q 2 hrs. prn if unrelieved by oral meds.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Continue alvimopan &amp; oral multimodal analgesia</li> <li>❖ Begin celecoxib 200 mg orally q 12 hrs. (<b>after 4 doses ketorolac given</b>)</li> </ul> <p><u>Note:</u> analgesia dosing may be adjusted based on renal &amp; hepatic function</p> <ul style="list-style-type: none"> <li>❖ <b>Minimize opioids- use only when pain unrelieved by ERAS medication algorithm or if intolerance to oral medications only;</b> use lowest dose necessary <i>based on VAS score</i> per ERAS Pathway</li> </ul>	 <p>Continue until discharge</p>
<p><b>Refer to the following "SMH Clinical Practice Guidelines":</b> <i>Colorectal SSI Prevention Bundle- Adult, Colorectal Surgery Enhanced Recovery, Pre-operative Carbohydrate Loading for Elective Colorectal Surgery for Adults, Antibiotics for Surgical Prophylaxis, Preventing Catheter Associated Urinary Tract Infections, DVT-PE Risk Assessment &amp; Prophylaxis (Adult), Prophylaxis &amp; Treatment of Post-operative Nausea &amp; Vomiting (PONV) for Adults, Adult Perioperative Glucose Control</i></p>					

	Pre-Hospital	Pre-op: DOS	Post-op: Day 0	Post-op: Day 1	Post-op: Day 2 & Beyond
<b>Fluids &amp; Nutrition</b>	<p><u>See "Preparation"</u> for details</p> <ul style="list-style-type: none"> <li>❖ Regular diet until 2 pm day before surgery</li> <li>❖ Clear liquids after bowel prep completion and up to 2 hours before SSC arrival</li> </ul>	<ul style="list-style-type: none"> <li>❖ Clear liquids up to 2 hours prior to SSC arrival</li> <li>❖ LR @ 20 ml/hr.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Maintenance IVF NS @ 100 ml/hr.</li> <li>❖ Clear liquid diet as tolerated</li> <li>❖ Strict I&amp;O q 4 hours</li> </ul>	<ul style="list-style-type: none"> <li>❖ Anticipate IVF discontinuation as oral intake is established</li> <li>❖ Regular diet; patient will self-regulate diet</li> <li>❖ Small portions &amp; chew well</li> <li>❖ Encourage oral fluid intake to avoid IVF</li> </ul>	
<b>Infection, VTE, &amp; Ileus Prophylaxis</b>	<p><u>Optimize health:</u></p> <ul style="list-style-type: none"> <li>❖ Stop smoking (or limit as much as possible)</li> <li>❖ Exercise</li> <li>❖ Limit (or stop) alcohol consumption</li> <li>❖ Eat healthy meals (i.e. 60-90 grams protein)</li> <li>❖ Follow-up with provider to discuss pre-op diabetes management &amp; post-discharge routine</li> </ul> <p><u>Oral antibiotics with mechanical bowel preparation on day before surgery:</u></p> <ul style="list-style-type: none"> <li>❖ Neomycin 1,500 mg orally at noon, 1 pm, &amp; 8 pm</li> <li>❖ Metronidazole 500 mg orally only at noon, 1 pm, &amp; 8 pm (if neomycin is contraindicated, take only Metronidazole)</li> <li>❖ <u>Evening before surgery:</u> Shower or bathe with chlorhexidine gluconate scrub (per instructions), no shaving, wear clean clothes</li> </ul>	<p><u>Morning of surgery:</u> Shower or bathe with chlorhexidine gluconate soap (per instructions), no shaving, wear clean clothes</p> <p><u>Review infection prevention:</u></p> <ul style="list-style-type: none"> <li>❖ Incentive spirometer</li> <li>❖ SSI information</li> <li>❖ Administer ertapenem</li> </ul> <p><u>VTE prophylaxis:</u></p> <ul style="list-style-type: none"> <li>❖ Administer enoxaparin</li> <li>❖ Review foot/ankle pumping exercises</li> <li>❖ Apply IPC's upon admission to OR</li> </ul> <p><u>Ileus prophylaxis:</u></p> <ul style="list-style-type: none"> <li>❖ Administer alvimopan unless contraindicated</li> </ul>	<ul style="list-style-type: none"> <li>❖ Continue operative wound dressing until POD 2</li> <li>❖ Alvimopan BID (unless contraindicated)</li> </ul> <p><u>Continue to reinforce:</u></p> <ul style="list-style-type: none"> <li>❖ Incentive spirometer, deep breathing &amp; coughing every 1-2 hrs. (while awake), flutter valve q 4 hrs. prn (while awake)</li> <li>❖ IPC's <i>continuously</i> unless awake in chair or walking</li> <li>❖ Foot/ankle pumping ~ every hour if not wearing IPC's</li> <li>❖ OOB to chair within 6 hours of surgery</li> <li>❖ Walking as tolerated</li> <li>❖ Gum chewing for 20 minutes 3 x a day</li> </ul>	<p><u>Urinary catheter:</u> Remove per order in a.m. for right-sided colon surgery unless documented otherwise</p> <p><u>Continue:</u></p> <ul style="list-style-type: none"> <li>❖ While awake: Incentive spirometer &amp; deep breathing and coughing q 1-2 hrs. &amp; flutter valve q 4 h prn</li> <li>❖ Ankle/foot pumping exercises regularly if IPC's off</li> <li>❖ IPC's when in bed/resting</li> <li>❖ OOB/to chair for all meals (6 hours per day)</li> <li>❖ Walking: Increase to 3 times a day</li> <li>❖ Gum chewing 3 x a day until return of bowel function</li> <li>❖ Operative wound dressing until POD 2</li> </ul>	<p><u>Urinary catheter:</u> Remove per order in a.m. for rectal/low pelvic, APR, and left-sided colon surgery unless documented otherwise</p> <p><u>Continue activities as in POD 1:</u> Routine lung &amp; leg exercises, IPC's, gum chewing if not regularly passing gas/having stool</p> <p><u>Progressive mobilization:</u></p> <ul style="list-style-type: none"> <li>❖ Out of bed for longer (8 hours per day)</li> <li>❖ Walk 4 x a day; increase as tolerated</li> </ul> 
<b>Discharge Planning</b>	<p><u>Plan for short-term assistance:</u></p> <ul style="list-style-type: none"> <li>❖ Ride to &amp; from hospital</li> <li>❖ Backup person for ostomy, etc.</li> <li>❖ Transportation to &amp; from medical appointments</li> </ul> <p><u>Estimated LOS:</u></p> <ul style="list-style-type: none"> <li>❖ Colon procedures: 4 days</li> <li>❖ Rectal procedures: 5 days</li> <li>❖ Ostomy reversals: 3-4 days depending on specific procedure</li> </ul>	<ul style="list-style-type: none"> <li>❖ Anticipate Lovenox® teaching for all <i>new</i> cancer surgeries (unless patient is taking therapeutic anti-coagulants)</li> </ul>	<p><u>Consults:</u></p> <ul style="list-style-type: none"> <li>❖ PT if patient unable to get OOB</li> <li>❖ SW for discharge/placement barriers</li> <li>❖ Certified Ostomy Nurse &amp; CHN for all ostomies</li> <li>❖ Nutrition for ileostomies</li> <li>❖ Ostomy Visitor Program</li> </ul>	<ul style="list-style-type: none"> <li>❖ Begin Lovenox® teaching for all <i>new</i> cancer surgeries</li> <li>❖ Anticipate Foley/leg bag teaching for patients with bladder repairs</li> <li>❖ Reinforce ostomy education i.e. emptying pouch, measuring I&amp;O, nutrition</li> <li>❖ Continue to reinforce exercises &amp; activity per PT</li> <li>❖ Anticipate drain teaching for patients with percutaneous drains, JP's, etc.</li> </ul>	<ul style="list-style-type: none"> <li>❖ <u>Continue teaching &amp; review of:</u> Lovenox®, Foley/leg bag, ostomy care, nutrition &amp; hydration, drains, mobilization, etc.</li> <li>❖ Initiate Twistle® workflow (per CRS Team)</li> </ul> 