



**MGH Cystectomy ERAS**

Updated 04.17.2022

**ANESTHESIA BUNDLE**

Element	Definition
Preoperative Testing  <a href="#">Surgeons, residents, fellows</a> <a href="#">PPE/PATA</a> <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>In accordance with hospital policy, all patients should receive an anesthesia preoperative phone call, or visit, per departmental guidelines, prior to the day of surgery. Anesthesia consultant will communicate any recommendations for further testing with primary surgeon's office.</li> <li>Patients with high degree of medical or anesthetic complexity as assessed by the surgeon at the preoperative visit should be referred to anesthesia for preoperative evaluation per institutional best practice via e-mail at least 7 days prior to surgery to facilitate preoperative workup.</li> <li>In accordance with departmental guidelines, patients older than 65 and patients with a history of cardiac disease should have an EKG performed within 6 months of surgery</li> <li>A CBC should be performed within 90 days for patients</li> <li>Routine preoperative chest x-rays are not indicated</li> <li>Diabetic patients should have a preop fingerstick on day of surgery</li> </ul>
Preoperative Home Medication Management  <a href="#">Surgeons, residents, fellows</a> <a href="#">PPE/PATA</a> <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>Hold ACE inhibitors and ARBs on the day of surgery</li> <li>Take prescribed beta-blockers on the day of surgery</li> <li>Patients on long-acting narcotic therapy (e.g. OxyContin) should take their extended-release narcotic on the day of surgery</li> <li>Anticoagulation management will be at the discretion of the primary surgeon</li> <li>Vitamin/herbal supplements, and fish oil should be held 7 days prior to surgery</li> </ul>
Preemptive GI Motility  <a href="#">Surgeons, residents, fellows</a> <a href="#">CPC / pre-op Nursing</a> <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>Alvimopan 12mg PO 30-60 minutes pre-op</li> </ul>
Preemptive Analgesia  <a href="#">Surgeons, residents, fellows</a> <a href="#">CPC / pre-op Nursing</a> <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>Patients should receive 975mg to 1,000mg of acetaminophen orally prior to surgery</li> </ul>
Pre-operative Fluid Management  <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>Saline lock IVs prior to arrival in operating rom</li> </ul>
Premedication  <a href="#">CPC / pre-op Nursing</a> <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>Routine premedication with midazolam is discouraged in older patients</li> <li>Regional anesthesia placement may be facilitated by fentanyl +/- midazolam for procedural sedation; however, patients over 65 should receive no more than 1 mg IV midazolam (fentanyl only sedation preferred)</li> </ul>
Intraoperative Antiemetic Prophylaxis  <a href="#">Anesthesia</a>	<ul style="list-style-type: none"> <li>Unless contraindicated, patients should receive antiemetic prophylaxis with at least two of the following medications administered intraoperatively:               <ol style="list-style-type: none"> <li>Zofran 4mg IV</li> <li>Haloperidol 1mg IV</li> <li>Dexamethasone 0.1mg/kg (max 8mg)</li> <li>Scopolamine patch (should not be used in patients over 65)</li> </ol> </li> </ul>
Postoperative Antiemetic Use  <a href="#">Surgeons, residents, fellows</a> <a href="#">Anesthesia</a> <a href="#">PACU Nursing</a> <a href="#">Floor Nursing</a>	<ul style="list-style-type: none"> <li>The following medications are acceptable for rescue antiemetic use:               <ol style="list-style-type: none"> <li>Zofran 1-4mg IV</li> <li>Haloperidol 1mg IV</li> <li>Metoclopramide 5-10mg IV</li> <li>Promethazine 6.25-12.5mg IM</li> </ol> </li> <li>The first line rescue antiemetic given in the PACU should be a drug not given pre- or intraoperatively</li> </ul>

<p>Intraoperative Fluids</p> <p>Anesthesia</p>	<ul style="list-style-type: none"> <li>• Consider goal-directed fluid therapy.</li> <li>• Consider arterial line placement with serial lactate and base-excess monitoring to guide fluid replacement.</li> <li>• Suggest 5cc/kg/hr, limit IV boluses to 500cc at a time</li> <li>• GOAL IS CONTINUED URINE OUTPUT</li> <li>• However, must be most conservative with fluids while ureters are disconnected from bladder and potentially clamped</li> </ul>
<p>Intraoperative Medication Use</p> <p>Anesthesia</p>	<ul style="list-style-type: none"> <li>• The following medications are <b>NOT PREFERRED</b> and should be avoided if possible: <ul style="list-style-type: none"> <li>○ Isoflurane</li> <li>○ Morphine</li> </ul> </li> <li>• Fentanyl is the preferred narcotic for intraoperative use <ul style="list-style-type: none"> <li>○ Anesthetic adjuncts should include: <ul style="list-style-type: none"> <li>▪ Dexmedetomidine infusion 0.5mcg/kg/hr IV</li> <li>▪ Lidocaine 1.5mg/kg/hr IV infusion (should not be used for patients receiving regional anesthesia)</li> <li>▪ Ketamine 5mcg/kg/min IV infusion</li> <li>▪ If possible, remifentanyl should be <b>AVOIDED</b> to minimize the risk of PONV and hyperalgesia.</li> </ul> </li> </ul> </li> <li>• Antibiotic prophylaxis should be provided with cefazolin (unless allergic in which case an appropriate substitute should be given) within 60 minutes of incision</li> <li>• Acetaminophen 1 gm IV should be administered before emergence from anesthesia</li> <li>• Please do not administer Ketorolac intra-op given risk of acute kidney injury</li> </ul>
<p>Neuromuscular Blockade</p> <p>Anesthesia</p>	<ul style="list-style-type: none"> <li>• NMB may be maintained with either rocuronium, vecuronium or cisatracurium; cisatracurium is preferred in patients with renal dysfunction</li> <li>• Adequate offset of neuromuscular blockade should be ensured with either: sustained handgrip on 100 Hz tetanic stimulation of &gt;5 seconds or quantitative TOF monitor with ratio &gt;0.9 <u>or</u> documentation of adequate conditions for reversal (&gt;2 twitches) and appropriate dose of reversal agent per best practice.</li> </ul>
<p>Intraoperative Ventilation Management</p> <p>Anesthesia</p>	<ul style="list-style-type: none"> <li>• Ventilation strategy <ul style="list-style-type: none"> <li>○ Goal ventilation strategy should be TV of 5-7 mL/kg of IBW with PEEP ≥ 5 cm H<sub>2</sub>O</li> </ul> </li> </ul>
<p>Postoperative Analgesia</p> <p>Surgeons, residents, fellows Anesthesia PACU Nursing Floor Nursing</p>	<ul style="list-style-type: none"> <li>• Patients should receive <u>scheduled</u> acetaminophen 650gm PO q 6 hrs.</li> <li>• Narcotic therapy should be minimized <ol style="list-style-type: none"> <li>1. First line rescue therapy for mild to moderate pain should be a non-narcotic such as Acetaminophen or adjustment of regional analgesia catheter</li> <li>2. Oxycodone 5-10mg PO or tramadol 50-100 mg PO are the preferred first line narcotic agents; IV narcotic therapy should be used for third line rescue use only for patients tolerating oral agents</li> </ol> </li> <li>• TAP blocks, or regional catheters per institutional best practice at the end of the procedure.</li> </ul>

## SURGICAL BUNDLE

Element	Definition
<p>Preoperative Visit</p> <p>Surgeons, residents, fellows Surgical clinic nursing PPE/PATA</p>	<ul style="list-style-type: none"> <li>• Pre-Operative visits:               <ol style="list-style-type: none"> <li>1. Insurance pre-approval for VNA</li> <li>2. Stoma education by Stoma nursing</li> <li>3. Post-op recovery education care and expectation management</li> <li>4. ERAS pain control methodology, including regional anesthesia</li> <li>5. Patients will NOT receive bowel prep prior to surgery</li> </ol> </li> </ul>
<p>Preoperative screening</p> <p>Surgeons, residents, fellows Surgical clinic nursing PPE/PATA team</p>	<ul style="list-style-type: none"> <li>• Preoperative screening should include:               <ol style="list-style-type: none"> <li>1. Anemia screening</li> <li>2. Nutritional screening per institutional best practice</li> <li>3. Tobacco and alcohol use screening and cessation counseling</li> <li>4. Identify any bleeding risk, anyone on anticoagulants</li> </ol> </li> </ul>
<p>Preoperative Nutritional Supplement</p> <p>Surgeons, residents, fellows Surgical clinic nursing</p>	<ul style="list-style-type: none"> <li>• Hydration &amp; hi-carb, hi-protein meals 2-3 days prior to surgery</li> <li>• Clear liquid diet 1 day prior to surgery</li> <li>• All patients should receive a preoperative nutritional supplement drink prior to surgery.</li> </ul> <p>Patients should be given instructions to drink the accepted carbohydrate drinks starting 4 hours before check-in at the hospital. Patients are advised to drink 2 bottles of Ensure Clear Pre-Surgery® or equivalent (see below). Patient must stop drinking 2 hours before check-in at the hospital for the surgery.</p> <ol style="list-style-type: none"> <li>1. A carbohydrate drink containing at least 45 gm of complex carbohydrates in at least 24 oz of isotonic fluid is strongly recommended (e.g., 24 oz of Clearfast®, Ensure Clear Pre-Surgery® or a clear equivalent preparation)</li> <li>2. If above option is unavailable, up to 20 oz of Gatorade “Thirst Quencher” or other complex carbohydrate containing solution is an acceptable alternative. Of note, G2 or artificially sweetened sports drinks should not be consumed.</li> </ol>
<p>Preoperative antibacterial shower</p> <p>Surgeons, residents, fellows Surgical clinic nursing</p>	<ul style="list-style-type: none"> <li>• Shower/bathe with liquid chlorhexidine soap for 2 days prior and on the morning of surgery per institutional best practice or surgeon instruction.</li> </ul>
<p>DVT prophylaxis</p> <p>Surgeons, residents, fellows CPC / pre-op Nursing OR Nursing PACU Nursing Floor Nursing</p>	<ul style="list-style-type: none"> <li>• DVT prophylaxis per primary surgeon order.</li> <li>• Heparin 5000 units Sub-Q prior to induction of anesthesia.</li> <li>• Compression boots applied and activated prior to induction of anesthesia</li> </ul>
<p>Maintenance of Normothermia</p> <p>Surgeons, residents, fellows Anesthesia OR Nursing</p>	<ul style="list-style-type: none"> <li>• Actively warm before and throughout surgery to achieve target temperature of 36° C using one or more of the following:               <ol style="list-style-type: none"> <li>1. Room temperature at &gt;68° F until patient prepped and draped</li> <li>2. Fluid warming device under body</li> <li>3. Forced warm air over-body device</li> </ol> </li> </ul>
<p>Intraoperative Skin Prep</p> <p>Surgeons, residents, fellows</p>	<ul style="list-style-type: none"> <li>• Acceptable skin preps:               <ol style="list-style-type: none"> <li>1. Clear Chloroprep is the preferred skin prep</li> <li>2. Prep must be allowed to air-dry (minimum 3 minutes) before draping and</li> </ol> </li> </ul>

OR Nursing	<p>incision</p> <p>3. Exclusive iodine-only solutions are <u>not</u> acceptable except in emergent cases</p>
<p>Intraoperative Drain Placement</p> <p>Surgeons, residents, fellows OR Nursing</p>	<ul style="list-style-type: none"> <li>• Drain care per surgeon orders</li> <li>• OG and NG tubes should be removed at the end of the procedure</li> </ul>
<p>Optimized Postoperative Fluid Management</p> <p>Surgeons, residents, fellows Anesthesia PACU Nursing Floor Nursing</p>	<ul style="list-style-type: none"> <li>• Initial postoperative fluid orders: 75mL/hr or 1 mL/kg/hr, discontinue within 36 hours or once PO intake &gt; 500 mL</li> </ul> <p><u>Postoperative Hypotension and Fluid Responsiveness:</u></p> <ul style="list-style-type: none"> <li>• Do not intervene unless: <ol style="list-style-type: none"> <li>1. MAP &lt; 65 <b>or</b></li> <li>2. UOP &lt; 0.2 mL/kg/hr <b>and</b> patient has other signs of hypovolemia</li> </ol> </li> <li>• If any of the above occur, the patient should be examined and causes of hypotension other than inadequate fluid administration excluded (e.g. bleeding, myocardial ischemia etc.)</li> <li>• If the patient meets above criteria, initial response may be: <ol style="list-style-type: none"> <li>1. Crystalloid or colloid 250mL bolus up to 2 times <u>and/or</u></li> <li>2. Vasopressors if patient is in a step-down or ICU setting (consider placing patients in such a setting if you anticipate fluid management challenges)</li> </ol> </li> <li>• Failure to respond appropriately should result in: <ol style="list-style-type: none"> <li>1. A call to the senior anesthesia resident or attending before administering additional fluid.</li> <li>2. A call to the urology team before administering additional fluid.</li> <li>3. The on-call Acute Pain Service (APS) resident or equivalent anesthesia provider on call should be notified for patients with fluid-refractory hypotension with regional catheters.)</li> </ol> </li> </ul>
PACU Care	<ul style="list-style-type: none"> <li>• Incentive spirometry</li> <li>• Fingerstick glucose every six hours.</li> <li>• Head of bed at 30 degrees.</li> <li>• Continue SCDs</li> <li>• Surgeon to send designee to check on patient prior to discharge.</li> </ul>
<p>Early Postoperative Diet Advancement</p> <p>Surgeons, residents, fellows PACU Nursing Floor Nursing</p>	<ul style="list-style-type: none"> <li>• Advance diet as tolerated</li> </ul>
<p>Early Postoperative Mobilization</p> <p>Surgeons, residents, fellows PACU Nursing Floor Nursing</p>	<ul style="list-style-type: none"> <li>• Patients should be out of bed within six hours of arrival in PACU.</li> </ul>
<p>Post-Operative Meds</p> <p>Surgeons, residents, fellows PACU Nursing</p>	<p>Scheduled pain meds:</p> <ul style="list-style-type: none"> <li>• Acetaminophen 650mg PO Q 6 hours</li> <li>• Oxycodone immediate release 5-20mg PO q4 hrs PRN</li> <li>• Ketorolac 15 mg IV q 6 hrs x 72 hrs (exclude patients with Cr &gt; 1.5 or UOP &lt; 30ml/hr) PRN</li> </ul> <p>Scheduled GI Motility meds:</p> <ul style="list-style-type: none"> <li>• Alvimopan 12 mg PO BID for maximum of 7 days; stop when flatus or bowel movements</li> </ul>

Scheduled antibiotics:

- Continue appropriate perioperative antibiotics for 24 hrs postoperative