MSQC Colectomy Bundle Recommendations and Tool

The MSQC is dedicated to improving the quality of patient care processes and outcomes. Surgical site infection (SSI) is the most common nosocomial infection and contributes substantially to a patient’s morbidity and mortality after surgery. SSI drastically elevates costs by increasing lengths of postoperative hospital stay, elevating rates of readmission and threatening health outcomes. The first step in the treatment of SSIs is prevention. MSQC has developed a data-driven process care bundle focused on SSI prevention for colectomy procedures. Supported by numerous research findings, implementation of the bundle is associated with a decrease in SSI.

### SSI Prevention Practices

<table>
<thead>
<tr>
<th>Preoperative</th>
<th>Intraoperative</th>
<th>Postoperative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruct patient to shower or bathe (full body) with antimicrobial soap on at least the night before surgery</td>
<td>Use an alcohol-based skin preparation</td>
<td>Do not apply topical antimicrobial agents to incision</td>
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<tr>
<td>Oral antibiotics with mechanical bowel preparation*</td>
<td>Use minimally invasive surgery*</td>
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<td></td>
<td>Short operative duration*</td>
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<td></td>
<td>Gown, glove, and instrument change before fascial closure</td>
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<tr>
<td>Appropriate prophylactic IV antibiotics*</td>
<td>Maintenance of normothermia*</td>
<td></td>
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<td></td>
<td>Maintenance of euglycemia*</td>
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<tr>
<td></td>
<td>Provide verbal and written education and reinforcement of incision care and SSI prevention measures</td>
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* MSQC Evidence-based Colectomy Bundle Recommendation
### MSQC Colectomy Bundle Implementation Tool

#### Preoperative Oral Antibiotics with Mechanical Bowel Prep \(^1,2\)

**NuLytely Bowel Prep 4000 mL**  
*Instructions:* At 9 am the day before surgery, start drinking 8 oz of NuLytely every 10 minutes until 4 liters are consumed. This will take about 3 hours.

**Neomycin 500 mg, 6 tabs.**  
*Instructions:* Take 2 tabs (1000 mg) at 1pm, 2pm, and 10pm the day before surgery

**Metronidazole 500 mg, 3 tabs.**  
*Instructions:* Take 1 tab (500 mg) at 1pm, 2pm, and 10pm they day before surgery

#### Appropriate Prophylactic IV Antibiotics \(^3,4\)

**Preoperative Cefazolin + Metronidazole**

**Cefazolin** 2 g IV 30-60 minutes prior to incision. If patient weighs $\geq 120$ kg, consider 3 g for *weight-based dosing*

**Metronidazole** 500 mg IV 30-60 minutes prior to incision.

**Intraoperative Redosing**

**Redose Cefazolin** 4 hours from initiation of preoperative dose if patient still in surgery.

**Redose Metronidazole** 8 hours from initiation of preoperative dose if patient still in surgery.

#### Exceptions/Alternatives

<table>
<thead>
<tr>
<th>Cephalosporin Allergy</th>
<th>Metronidazole Shortage</th>
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<tr>
<td>Clindamycin + Aztreonam</td>
<td>Cefoxitin</td>
</tr>
<tr>
<td>Clindamycin 900 mg IV 30-60 minutes prior to incision. <strong>Redose</strong> 6 hours from initiation of preoperative dose if patient still in surgery</td>
<td>Cefoxitin 2 g IV 30-60 minutes prior to incision. <strong>Redose</strong> 2 hours from initiation of preoperative dose if patient still in surgery</td>
</tr>
<tr>
<td>Aztreonam 2 g IV 30-60 minutes prior to incision. <strong>Redose</strong> 4 hours from initiation of preoperative dose if patient still in surgery</td>
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</tbody>
</table>

#### Postoperative Normothermia in PACU (>96.8F, 36.0C)

**Intraoperative warming** to maintain normothermia

**Active warming in PACU.** Bair Hugger PRN to maintain postoperative normothermia
### Postoperative day 1 glucose <140 mg/dL

#### DIABETIC

**Preoperative HbA1C**

<table>
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<th><strong>Check HbA1C level.</strong> If time allows and glucose not controlled, adjust home regimen. Consider referral to endocrinology or medicine for management.</th>
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**Intraoperative Glucose Monitoring**

Check glucose on arrival and **every 30-60 minutes for surgeries >1 hour**. Insulin infusion is preferred. Avoid subcutaneous insulin.

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When NPO, check **POC glucose every 6 hours** and utilize insulin infusion or basal insulin. Once diet advanced, check POC glucose before meals/bedtime and utilize basal-bolus regimen. Consider consult to endocrinology or medicine for management.

#### NON-DIABETIC

**Preoperative HbA1C**

<table>
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<th><strong>Consider checking HbA1C or fasting blood glucose with preoperative labs. If abnormal, consider referral to endocrinology or medicine.</strong></th>
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**Intraoperative Glucose Monitoring**

Check glucose on arrival and if elevated, check intraoperative **every 30-60 minutes for surgeries >1 hour**. Insulin infusion is preferred. Avoid subcutaneous insulin.

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If patient had elevated glucose before or during surgery, **monitor 24-48 hours postoperatively**. If patient had normoglycemia, **consider checking POC glucose on morning of POD 1 before meal**. Utilize insulin infusion or basal insulin if patient NPO. Once diet advanced, utilize basal-bolus regimen. Consider consult to endocrinology or medicine for management.

### Use of Minimally Invasive Surgery

Maximize use of laparoscopic approach unless contraindicated.

### Short Operative Duration

For all surgical techniques, facilitate intraoperative care processes to maximize efficiency in the operating room. When performing open surgery, **target operative duration is <100 minutes**.
Resources:

Mechanical Bowel Prep


Appropriate Prophylactic IV Antibiotics


Glucose Management


Colectomy Bundle
