Safety Action Bundle: Surgical Site Infections (SSI) – Colorectal Surgeries

**Background**
- Surgical site infections (SSI) are the most common and costly reported health care-associated infection (HAI). Colorectal surgery SSI rates range from 5% to 45%.
- SSIs contribute to significant patient morbidity, mortality, prolonged hospital stays, readmissions and the need for subsequent procedures.
- SSIs are believed to account for $3.5 billion to $10 billion annually in healthcare expenditures.
- Up to 60% of SSIs have been estimated to be preventable by using evidence-based guidelines.

**Aim**
To reduce the incidence of Colorectal Surgical Site Infections by 20% by September 28, 2017.
*Hospitals in top quartile (zero) should focus on maintenance and hardwiring.*

**Measures**

*Outcome: Colorectal Surgical Site Infections Rate per Centers for Medicare and Medicaid (CMS) and State Law*

*Process: SSI Colon Bundle Elements*

*Submit: National Healthcare Safety Network (NHSN)*

**Core Strategies**

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<thead>
<tr>
<th>Patient and Family Engagement</th>
<th>Definition</th>
<th>Reference</th>
<th>Tool</th>
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<tbody>
<tr>
<td>□ Educate patient and family on what to expect throughout the surgical experience and identify discharge needs.</td>
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<td>□ Encourage and support patient and family participation in care planning and decision making by providing tools like the Centers for Disease Control (CDC) “Frequently Asked Questions about Surgical Site infections”.</td>
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<tr>
<td>□ Educate patient and family on the significance of hand hygiene and impact on SSI prevention.</td>
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<td>□ Identify a multidisciplinary team that includes senior and unit-level leadership, perioperative clinical providers, infectious disease and prevention, pharmacy and quality personnel.</td>
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## Surgical Site Infection (SSI) — Colorectal ADDENDUM

**Pre-Operative Period**

- Set aims, goals and timelines for practice changes and performance.
- Educate care providers on risk factors for SSI and prevention with an emphasis on bundle elements and evidence-based best practices.
- Provide education to patient in the office/clinic when the decision is made for operation on “Preventing SSIs” and ensure understanding. Include information about the importance of pre-operative bowel prep and oral antibiotics and consider providing the antibiotics.
- Ensure patient had a Hibiclens shower night before and day of surgery.
- Use 2% chlorhexidine gluconate (CHG) cloths on the morning of surgery, if no CHG shower or BMI >30.
- Screen and identify patients at risk for hyperglycemia and implement a glucose control protocol. Every patient should have a fasting glucose checked during the 30 days before the operation. Anyone with a glucose >100 should have intra-operative glucose screening.
- Ensure weight-based antimicrobial prophylaxis administered within 1 hour prior to incision. (Ideally, antibiotics are given by anesthesia in the OR.)
- If hair removal is needed, use clippers and not razors, outside of the operating room.
- Actively warm all patients for at least 30 minutes BEFORE going into the OR.

## Intra-Operative Period

- Pause and have surgical team review surgical checklist. Establish teamwork, culture of safety and open communication.
- Skin Prep: Wash and clean skin around incision site using a 2% CHG product with alcohol.
- Maintain normothermia. Standardize procedures for active warming in the operating room (Maintain body temp > 96.8° F/36.0°C) (warming blankets/warm fluids).
- Ensure weight-based re-dose of antimicrobial agents within 3-4 hours after incision (use timer/electronic reminder in anesthesia record).
- Optimize tissue osugentation by administering supplemental oxygen (FiO2 = or > 80%).
- Measure glucose in OR 30-60 minutes after incision and use insulin to control if level above 160.
- Consider wound-edge protectors.
- Use dedicated wound closure tray for closure of fascia and skin.
- Glove and gown change by entire team after anastomosis completed and before fascial closure.
### Post-Operative Period
- Discontinue antibiotics when patient leaves the OR.
- Maintain blood glucose during the postoperative period at 160mg/dl or lower.
- Optimize tissue oxygenation by administering supplemental oxygen.
- Promote a patient shower with Hibiclens after dressing removal.
- Promote good hand hygiene practices with patient/family and provide hand sanitizing products at bedside.
- Reinforce patient education about SSI prevention measures and objectives.

### Post-Hospitalization Period
- Educate patient on wound care and signs and symptoms of infection.
- Follow-up phone call to patient within one week.

### Performance and Variation
- Measure and provide on-going feedback of Colorectal SSI rates with perioperative personnel and leadership.
- Investigate any SSI Colon that occurs and document if all elements of the bundle were completed.

### Moving Towards Zero
#### Daily Monitoring of SSI Colon
- Create and implement an SSI Colon bundle checklist based on the evidence-based guidelines and best practices.
- Monitor adherence to SSI Colon prevention bundle elements to identify gaps and opportunities for improvement.
- Collect SSI Colon rates by clinical provider to identify potential opportunities.

### Hardwiring
#### Culture
- Promote a blame-free environment where individuals are able to report errors or near misses without fear of reprimand or punishment.
- Encourage collaboration across ranks and disciplines to seek solutions for patient safety problems.
- Promote transparency of results from display on units to the board and public.
Key Resources


