Surgical Site Infections (SSI) significantly increase lengths of stay, cost, morbidity, and mortality.

Nasal carriage of S. aureus and bacteria on the skin increase the risk of developing an SSI.

Evidence supports reducing SSI through Staphylococcus aureus screening and decolonization protocols with the addition of antibiotic prophylaxis. 

**Goal**

Develop and implement a systematic approach to reduce surgical site infections (SSI) at 2 ministry hospitals for identified elective high-risk surgeries:

- Cardiac surgeries
- Total Joint Surgeries
- Spine surgeries
- Cranial surgeries

**Implementation**

Define protocol with support from key nursing, epidemiology, and physician champions.

Unit leaders from Pre-admission clinic (PAC/PAU), Pre-operative units (SAA/SMUA), Informatics, Laboratory, Physician offices, and Infection control predict optimal workflow.

Request submitted to Informatics to create order sets and required documentation fields.

Physician and physician office education.

RN and NAC Staff education:

- Defined patient population
- Nasal MRSA swab collection (RN)
  - Before arrival (Performed in the provider office/lab, pre-admit clinic)
  - Morning of procedure
- Chlorhexidine (CHG) wipe use/application
  - Provision of wipes/solutions & education to doctor offices
  - Staff (RN/NAC) education about proper technique and application of CHG (“Nose to Toes”) in pre-op areas
  - Scripting to educate patients about importance of CHG application.
- Nasal antiseptic (Povidone-Iodine Solution) application
  - Timing of application after MRSA swab collection and ideally at least 1 hour prior to surgery
  - Proper application technique
- Vancomycin antibiotic prophylaxis for known history of MRSA.
- Documentation

**Background Supporting Evidence**

Surgical Site Infections (SSI) significantly increase lengths of stay, cost, morbidity, and mortality.

Nasal carriage of S. aureus and bacteria on the skin increase the risk of developing an SSI.

Evidence supports reducing SSI through Staphylococcus aureus screening and decolonization protocols with the addition of antibiotic prophylaxis.

**Outcomes**

- Since implementation, some early improvements have been seen:

<table>
<thead>
<tr>
<th>% of Decrease/Increase Rate of SSI in first quarter after implementation</th>
<th>Minority</th>
<th>Pop. average</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-50%</td>
<td>62%</td>
</tr>
</tbody>
</table>

- Realized benefit of use of pre-admission clinic visits and pre-call to enhance patient preparation, MRSA swab collection, and understanding of surgery and bathing.

- Implementation around similar time as a De-Isolation Protocol generated some staff confusion; re-education was required regarding defined patient population and documentation.

- Some emotional angst as to why some patients were allowed to benefit from the CHG wipes, and others not.

- Patients presenting from inpatient units and/or emergency departments may not receive CHG bathing prior to surgery.

**Future Opportunities**

Monitor ongoing SSI rates to ensure sustained improvement.

Spread the use of CHG bathing to the inpatient units for the night prior and morning of surgery.

Consider educating operating room staff about CHG wipes and nasal antiseptic application for weekend and/or after-hours procedures.

Spread use of CHG wipes/bathing to cases involving other surgical procedures.

**References**

- Maslow, J., Hutzler, L., Cuff, G., Rosenbert, A., et al. (2014). Patient experience with mupirocin or povidone iodine isolation protocol generated some staff confusion; re-education was required regarding defined patient population and documentation.
- Consider educating operating room staff about CHG wipes and nasal antiseptic application for weekend and/or after-hours procedures.
- Spread use of CHG wipes/bathing to cases involving other surgical procedures.

**CONTACT**

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