SESSION NAME: Building an ASC Surgical Site Infection Surveillance Program

SPEAKERS: Mary Haugen, MA, ADN, RN
Lori Groven, MSPHN, RN, CIC

SESSION NUMBER: 0017

DATE/TIME: Sunday, March 30, 2014, 10:30-11:30am

REPEAT SESSIONS: 0118, 0171
REPEAT DATES/TIMES: Monday, March 31, 2014, 7-8am
Tuesday, April 1, 2014, 8-9am

CONTACT HOURS (CH): 1.0

SESSION OVERVIEW:
In 2011, TRIA Orthopaedic Center developed a robust infection control program to better understand and track surgical site infections. This session will describe the road map TRIA developed to track SSI, including physician engagement, leadership, and support. Early successes, challenges, best practice, and lessons learned will be presented along with current status of program.

OBJECTIVES:
1. Describe the process of starting a surveillance program.
2. Identify components of a successful surveillance program.
3. Describe best practices in SSI prevention.
4. Describe the components of care reviewed in an SSI investigation.

SPEAKER BIOGRAPHY:
Mary Haugen, MA, ADN, RN, is director of nursing and the ambulatory surgery center at TRIA Orthopaedic Center and is responsible for overseeing the professional nursing practice model. She is the liaison between nursing, ancillary departments, and physician leadership, providing direction and guidance in regulatory requirements, infection control, research, and patient and staff satisfaction. A key program Mary oversees is the TRIA Hilton Recovery Program, which gives patients the opportunity to have procedures typically performed in a hospital setting, performance at the TRIA Ambulatory Surgery Center and recover in the non-traditional hotel setting. Mary has over 35 years’ experience in nursing, with the last 25 years in outpatient perioperative settings.

Lori Groven, MSPHN, RN, CIC, is currently the infection preventionist for TRIA Orthopaedic Center in Bloomington, Minnesota, and has over ten years of experience in the health care industry. Her background includes working as a nurse in medical/surgical and pediatrics in Minnesota, California, and Arizona. She has over five years of experience working in the field of infection prevention and is board certified in infection prevention and control. Lori has a BSN, as well as a Master's in public health nursing with a minor in public health, from the University of Minnesota. She is an active member of APIC and has been a member of the education committee for five years, two of which she served as chair of the committee.
SPEAKER CONTACT INFORMATION:
Lori Groven, MSPHN, RN, CIC
TRIA Orthopaedic Center
Bloomington, Minnesota
lori.groven@tria.com

Mary Haugen, BA, ADN, RN
Director, Nursing Practice
TRIA Orthopedics
Bloomington, Minnesota
mary.haugen@tria.com

FACULTY DISCLOSURE:
Mary Haugen: 7. No conflict.
History of Infection Prevention Program

• TRIA Orthopaedic Center
  – Single specialty center, a one stop shop for orthopaedic care
  – Clinic, Acute Injury Clinic
    • 115,000 visits per year
  – 6 Operating Rooms and 2 Procedure Rooms
    • 7,000 cases per year
  – Ancillary Services
    • Physical Therapy, Hand Therapy, Orthotics and Prosthetics
  – Research and Education
    • BioSkills Lab
    • Outcomes Studies

History of Infection Prevention Program

• Partnership of TOC, UMP, and Park Nicollet Health Services
• Each group has their own culture and expectations
• Difficult to gather true infection information
• Distinct EMR and documentation challenges
History of Infection Prevention Program

- Part time IP
  - Surgical surveillance
  - No connection to clinic or ancillary services
  - Limited team member education
  - Epidemiologist - difficult to understand the workflows and procedures

Building an SSI Surveillance Program

- 2011
  - Infection Preventionist role developed
    - Part-time role, RN with extensive OR experience
    - 60% ASC, 40% clinic
    - APIC member, certification
    - Surgical site surveillance
    - Team member education
    - TRIA-wide skills fair
Building an SSI Surveillance Program

• 2012
  – Monthly ASC cases review per surgeon instituted
  – Modeled after University of Minnesota
  – Championed by CEO
  – Pushback from surgeons not familiar with U practice
  – Required persistence and perseverance

Building an SSI Surveillance Program

• 2013
  – Full-time Infection Preventionist
    • Ongoing surgical site surveillance
    • Employee vaccine program
    • Embedded in quality and management activities
      – QAPI
      – Safety Committee
    • On ASC and Clinic Operating Committees
    • Team member education/competencies
    • Skills Fair coordination
SSI Surveillance Program

• SSI Surveillance Process:
  – Follow CDC guidelines
    • Surveillance for ALL surgical procedures
      – 30 days post surgery
      – 90 days post surgery (select cases per CDC)
      – 12 months post implant (through 2012 cases)
    • All Hilton cases reviewed by IP

SSI Surveillance Program

– Surgeons emailed list of patients monthly
  • Use standard letter
  • Responses saved in archived email
    – Cases pulled from electronic database, by IP
    – Average 550 cases/month
SSI Surveillance Program

• Other methods of notification:
  – Surgeons send real time emails to IP
  – Monthly hospital readmission report
  – Weekly culture report
    • Any positive culture on a TRIA patient in the Park Nicollet system
  – Alert from Park Nicollet Infection Prevention team
  – Surgeon case quality control
    • Cases reviewed for each surgeon at least one month/year to verify accuracy of surgeon self report
    • Discrepancies reported

SSI Surveillance Program

• Challenges:
  – Surgeons do not always respond to emails
    • Inefficient to bug them repeatedly
    • Various emails used (not always TRIA email)
  – Multiple medical record systems
  – No formal process to inform new surgeons of SSI surveillance protocol
    • Working on standardized information for new providers
  – Parent organization not in agreement with TRIA SSI surveillance process
SSI Surveillance Program

• Keys for Success:
  – Engage leaders early in the process
  – Engage physicians
    • Keep communication open
    • Notify them of changes in process and guidelines
  – Provide real time feedback
    • Confirmed and unconfirmed infections

SSI Surveillance Program

• Keys to Success
  – Know what’s going on
    • Observe practices in SPD, pre-op, operating room, and PACU
      – Conduct rounds on a regular basis
      – Give feedback to staff
  – Ask Questions!
SSI Best Practices

• Preoperative screening
  – No active infections, other than those related to surgery
    • No C-diff, VRE, tuberculosis patients
  – Encourage smoking cessation
  – ASA 2 or less
  – Age 5 or above

• Hair Removal
  – Shaving with razors associated with increased SSI rates
  – Use clippers if hair removal absolutely necessary
    • Only clip in preop, never OR

• Perioperative normothermia
  – Cold OR rooms, IV fluids, anesthesia, skin prep, etc. all contribute to patient temperature
  – Hypothermia can be associated with increased SSI rates and hospitalization stays
    • Bair Hugger™ used on all patients pre and post-op
SSI Best Practices

• Preop patient preparation
  – Enter day of surgery
  – Preop education

• Skin antisepsis
  – CHG Bath-in-a-Bag (total joints) night before and day of surgery
  – Duraprep™: scrub of choice
    • Timer on screen in OR-“explosion” when 3 minutes are up
  – CHG soap for local hand cases
  – Foot cases: scrub in preop before entering OR

SSI Best Practices

• Nasal decolonization
  – Nasal antiseptic (Povidone-Iodine USP, 5%) for Hilton patients

• Surgical hand antisepsis
  – Avagard™ scrub
  – Monthly hand hygiene audits

• Antibiotic prophylaxis
  – Appropriate timing of antibiotic (prior to time out)
  – Vancomycin for MRSA patients
SSI Best Practices

- Post operative period
  - Post op phone call
  - Patient education on s/s post op infection
  - Nurse triage and Acute Injury Clinic available for urgent post-op problems
    - Open 7 days a week
  - Post op wound checks
    - Annual wound care competency for staff who do post op checks

SSI Best Practices

- Air quality
  - Monthly smoke testing of OR rooms
  - Humidity sensors installed
  - Local room OR pressure corrected
    - Discovered local rooms negative pressure in summer 2013
    - Lengthy process to get corrected
    - Only hand cases performed in local rooms
      - 50% SSI's in hand cases
SSI Best Practices

• Set goals and expectations
  – Ensure they are doable and realistic
  – Don’t set yourself up for failure
  – Communicate them to leadership and staff

• Create risk assessment and action plan
  – Keep it updated
  – Follow through on interventions
SSI Best Practices

• Don’t recreate the wheel
  – Rely on nationally recognized guidelines

• Use your resources!
  – APIC list serve
  – APIC guide
  – CDC/NHSN recommendations
    • Updated frequently
  – MNASCA
  – Network with fellow IPs
## SSI Investigation

- CDC SSI Definitions followed
- Use standardized worksheet as guide
  - NHSN form available on CDC website:  
  - Several others available online
  - TRIA ASC Post Operative Infection Risk Analysis Worksheet
    - 2 page document
    - Information recorded in database

### TRIA ASC POST OPERATIVE INFECTION RISK ANALYSIS

<table>
<thead>
<tr>
<th>DEMOGRAPHICS:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name:</td>
<td>MBR:</td>
</tr>
<tr>
<td>Procedure:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PREOPERATIVE:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>Weight:</td>
</tr>
<tr>
<td>Diabetic?</td>
<td>YES</td>
</tr>
<tr>
<td>Preop Blood Glucose:</td>
<td></td>
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<tr>
<td>Smoke?</td>
<td>YES</td>
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<tr>
<td>Did patient take steroids in the past 30 days?</td>
<td>YES</td>
</tr>
<tr>
<td>If YES, why?</td>
<td></td>
</tr>
<tr>
<td>If YES, what drug?</td>
<td></td>
</tr>
<tr>
<td>If YES, when was last dose?</td>
<td></td>
</tr>
<tr>
<td>Did patient take antibiotics in the past 30 days?</td>
<td>YES</td>
</tr>
<tr>
<td>If YES, why?</td>
<td></td>
</tr>
<tr>
<td>If YES, what antibiotic?</td>
<td></td>
</tr>
<tr>
<td>Was full course taken?</td>
<td>YES</td>
</tr>
<tr>
<td>Preop Temperature:</td>
<td></td>
</tr>
<tr>
<td>Hair Removal?</td>
<td>YES</td>
</tr>
<tr>
<td>Razor</td>
<td>Clip</td>
</tr>
<tr>
<td>Preop Operating Room</td>
<td></td>
</tr>
<tr>
<td>Patient shave surgical site</td>
<td></td>
</tr>
<tr>
<td>Preop Lab: (LM-Total Joint):</td>
<td></td>
</tr>
<tr>
<td>Preop Skin Cleansing?</td>
<td>YES</td>
</tr>
<tr>
<td>Betadine</td>
<td>Hibiclin</td>
</tr>
<tr>
<td>At Home:</td>
<td>YES</td>
</tr>
<tr>
<td>IV access Preop?</td>
<td>YES</td>
</tr>
<tr>
<td>History of MRSA?</td>
<td>YES</td>
</tr>
<tr>
<td>3M Skin/Nasal Prep Used?</td>
<td>YES</td>
</tr>
<tr>
<td>Applied within 60 Minutes of the surgery time?</td>
<td>YES</td>
</tr>
</tbody>
</table>

List any other pre-existing patient diagnoses or problems:

Comments/Other:

<table>
<thead>
<tr>
<th>INTRAOPERATIVE:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA: 1 2 3 4 Local</td>
<td></td>
</tr>
<tr>
<td>Preop Antibiotic given:</td>
<td>YES</td>
</tr>
<tr>
<td>Operating Room #:</td>
<td></td>
</tr>
<tr>
<td>Length of Surgery in Minutes:</td>
<td></td>
</tr>
<tr>
<td>Surgical Wound Class: 1 3 4 NA</td>
<td></td>
</tr>
<tr>
<td>Foley placed?</td>
<td>YES</td>
</tr>
<tr>
<td>If YES, what antibiotic/dose?</td>
<td></td>
</tr>
<tr>
<td>If YES, administered timely?</td>
<td>YES</td>
</tr>
<tr>
<td>Other antibiotics given during surgery?</td>
<td>YES</td>
</tr>
<tr>
<td>If YES, what antibiotic/dose?</td>
<td></td>
</tr>
</tbody>
</table>

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SSI Investigation

Information collected:

- Patient name, age
  - Procedure
  - Surgeon
- OR info (room, staff)
  - Surgical prep
  - Hair removal
  - Tourniquet
- Warming device(s)
- Pre and Post-op antibx
  - ASA
  - Wound Class

- Risk index
- Smoking status
- MRSA history
- Nasal prep (Hilton pt's)
- Surgery duration
  - Cultures
  - Implants
- SSI prevention education
- Post-operative hospitalizations
- Post-operative surgical procedures

Current Status of Program

- Surgeons engaged in SSI prevention
  - All but 1 respond to monthly emails
  - Quality control 100% match with surgeon report
- Staff are engaged in SSI prevention
  - Reports of possible infections
  - IP questions
- SSI rate <0.50%
  - Decrease in hand SSI rate
Summary

• Dedicate staff to SSI surveillance program
• Engage leaders and surgeons early in the process
• Use evidence-based practice and nationally recognized guidelines
• Keep staff informed
• Observe practices
• Ask questions

Evidence-based References