Reducing Surgical Site Infections in Total Joint Arthroplasty:

It’s a War Not Just One Battle

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“Hip” News You “Knee-d” to Know...

- 327,000 total hip (THA) and 676,000 total knee (TKA) arthroplasties are performed annually in the US
- Projected increase of 572,000 THA and 3.48 million TKA through 2030
- Infection rates currently at 1.5% for THA and 1.14% for TKA
Potential Costs Up To $690 Billion through the Year 2030 Just for SSI in TJR

Why Do We Need to Improve?

- Surgical Site Infection is a significant factor for:
  - Patient morbidity
  - Surgical outcome
  - Total health care costs
- Approximate cost per SSI – $80K to $200K per incident

SSI Impact on Patients and Families

- Multiple surgical procedures
- Prolonged and more frequent hospital stays
- Poorer outcomes
- Higher risk for re-infections
- Decreased quality of life
- Lost work productivity
- Temporary/permanent disability
- Economic burden to patients AND the System
Project “JOINTS”
Joining Organizations IN Tackling SSIs

• Initiative funded by the federal government (HHS) to spread the Enhanced SSI Prevention Bundle
• Aligns with Partnerships for Patients CMS initiative
• Designed to prevent SSI in patients undergoing hip and knee joint replacements

The JOINTS Bundle

• MRSA/MSSA Colonization Identification and Eradication Program
• Preoperative Skin Cleansing with Cholorhexidine
• Alcohol Based Skin Preparation
Infection Prevention is a War Not Just One Battle…

Implementation of Project JOINTS Bundle and Best Practices from the Magee Bone and Joint Center

Pre-op Testing and Education

S. aureus Screening

- Nasal Swab Testing
- Negative for MRSA/MSSA no further action required
- Positive results (11%)
  - Topical mupirocin (5 days) Chlorhexidine wash for patient use 5 days prior to surgery
  - Pre-op IV Vanco and Cefazolin or Clindamycin
Pre-op Testing and Education
Engage the Patient in Their Own Care

Home Skin Cleansing Program

- Chlorhexide cloths used the night before surgery, 2 hours after shower
- Wound care education emphasized in pre-op teaching and Journey to Wellness Guide

Day of Surgery

Chlorhexidine Skin Cleansing

Antibiotic Protocol (SCIP)
Intra-op

Alcohol Based Skin Prep

- Chloraprep Favored
  - Avoids iodine allergy
  - Superior bacterial reduction at surgical site
  - Reproducible/standardized skin preparation
- Superior to Traditional Betadine Scrub and Paint

Intra-op

- Insertion of Foley after spinal anesthesia
- Efficient OR Team (less OR time and traffic)
- Less Invasive Surgical techniques
  - Extensive use of pulsatile lavage ABX irrigation and used prior to insertion of every implant component
  - Drain exit site distant from incision and in “z” fashion
- Redosing of ABX after 1000 cc of blood loss and/or 4 hours of surgical time
Post-op Care

- Handwashing
- Removal of Hemovac and Foley Early POD #1
- IV ABX discontinuation
- Op Site dressing changes daily, prn for breakthrough drainage and after showers

Discharge and Education

- Aquacel dressing applied at time of discharge
- Discharge wound care instructions (and starts at Pre-op Session):
  - During pre-op education
  - Community discharge classes POD #1
  - Oral and written instructions at time of discharge
Home Care

Incision Care

• Removal of Aquacel 7 days after discharge
• No Dental procedures for 4-6 weeks post-op
• ABX prescribed for testing/procedures where bleeding may occur

Bone and Joint Center Outcomes

• One of the highest volume centers in 6 years
• Only 2 OR’s a day (1,786 surgical patients: 1,480 TJR, 306 Spine)
• Over 90% of patients are discharged to home…and with lowest length of stay
• Best outcomes as measured by readmission rates, transfusion rates, infection rates, SCIP compliance and functional outcomes
• Lowest cost per case (real costs)

Improving Quality, Safety, & Waste Reduction
Total Joint Replacement Care Experience

Surgical Care Improvement Project

- Antibiotics D/C within 24 hr of Surg (% Yes)
  - National Avg.
  - State Avg.
  - Bone and Joint Center
- Antibiotics Given within 1 hr prior to surgery (% Yes)
- Appropriate Antibiotic Selection (% Yes)

Data for Jan 1 – Dec 31, 2011

Outcomes

Infection Rates
- 0.3% TKA (1.14% national average)
- 0.9% THA (1.5% national average)

Readmission Rate
- 30 days = 1.7%
- 60 days = 0.5%
- 90 days = 0.0%

**Reality TV for Care Givers**

**Staff Contacts/Time Analysis (22 patients)**

- **Number of Visits**
- **Time/Visit (min)**

**Staff Type**

- Avg Number of Visits
- Avg Time per Visit
Hand washing - Top 5 Care Giver Groups That Interact with Patients

28 Staff Types
# of contacts = 4034

Top 5 Care Givers
# of contacts = 3221
Account for 81% of contacts

- Nurse 39%
- Patient Care Technician 26%
- PT and OT 6%
- Patient Support Assistant 5%
- PT Technician 5%
- Others 19% (23 Staff Types)

Hand Hygiene Care Experience Working Group

- Personal Hand Hygiene Device (PhD)
- Hand Hygiene Festival
- Signage and Communication
- Sanitizer Dispenser Flags
In Order for Us to Win the War…

The Patient and Family must be the focus and engaged in their own care…this is the only way for us to understand problems, develop and implement solutions in order to deliver real value.

Only six weeks after surgery, Scot enjoys a ride on his mountain bike.