

# Preventing Orthopedic Total Joint Replacement Surgical Site Infections through a Comprehensive Best Practice Bundle/Checklist

**Authors:** Jette R. Hogenmiller, PhD, MN, APRN, CDE, James Hamilton, MD, Todd Clayman, RN, BSN, BernaSue Casper, MBA, Kathy Sparks, RN, BSN, Akin Cil, MD, James Stanford, MD, Sarah Darby, RN, BSN, MBA, Cheryl Pilsl, RN, DN, CRNA, Kara Settles, MD, Judy Kratz, RN, Steve DeGarmo, BS, Steve Williams, BA, Tendai Zinyemba, EVS; Hospital: Truman Medical Center, Kansas City,MO

**Issue:** SSI surveillance data from Orthopedic Total Hip (THA) and Knee Arthroplasty (TKA) patients in a Level 1 trauma, inner-city, academic medical center associated, safety-net hospital were greater than the 90th percentile using NHSN/CDC benchmarking data in all three risk categories where cases existed.

**Project:** The project goal was to implement clinical processes that result in SSI rates in the THA/TKA implant population (~120 annually) at the 10th percentile or less (zero SSIs) (NHSN, CDC, 2009). To accomplish this goal, a collaborative multidisciplinary team was formed and these surgeries were not performed for nearly 3 months, allowing the team to conduct a thorough investigation and develop a plan to meet the project goal.

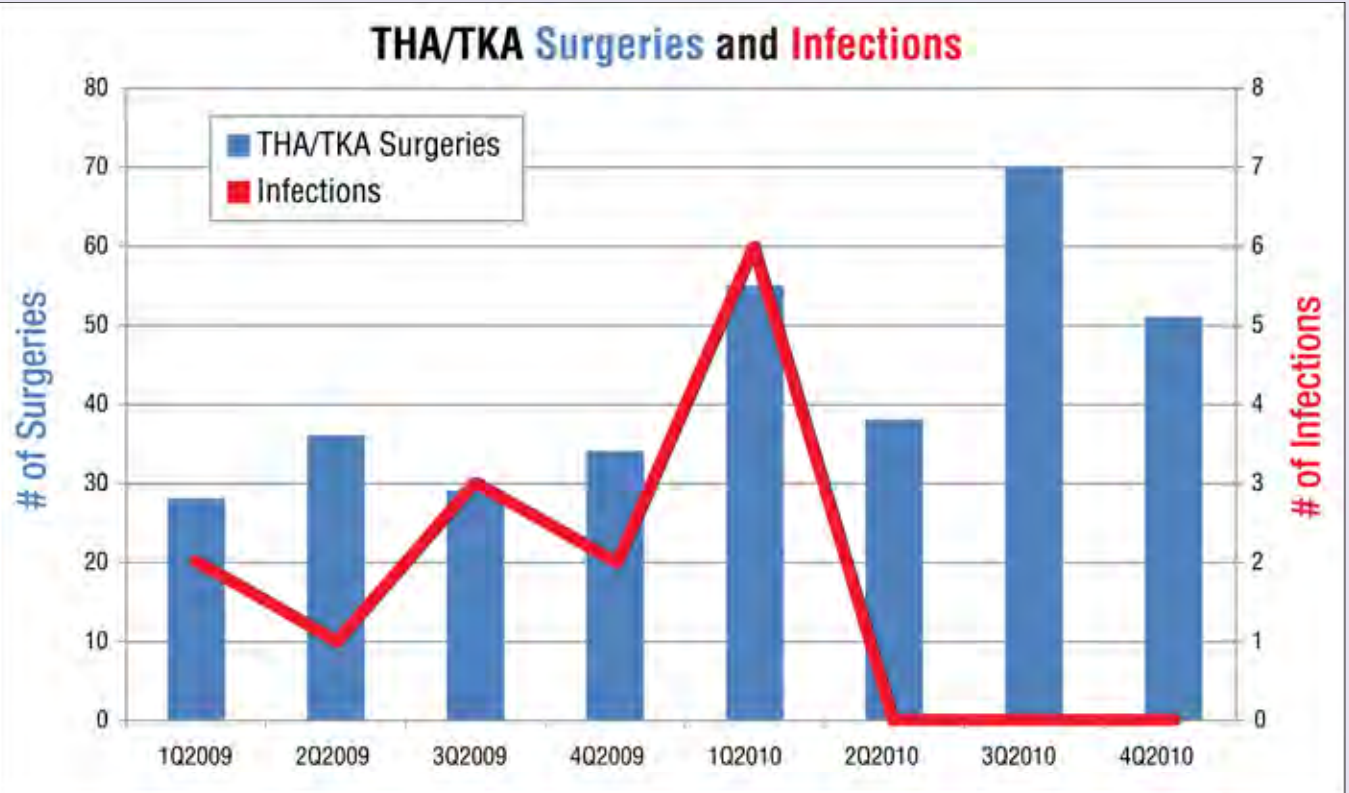
The investigation included:

- assessment of adequacy and reliability of adherence to best clinical practice
- evaluation of environmental cleanliness
- external evaluation of instrument processing
- review of scientific literature for additional best practice opportunities
- review of new products with potential to decrease SSIs

The investigation resulted in development of a comprehensive THA/TKA checklist including the five following elements in addition to SCIP standards of care:

- **Sage® 2% Chlorhexidine Gluconate (CHG) Cloths “showers” the night before and morning of surgery**
- **3M™ Skin & Nasal Antiseptic applied intranasally in the preoperative area**
- **Patient warming 30 minutes prior to & during surgery using 3M™ Bair Paws™ System**
- **Antibiotic infusion completed 10 minutes prior to incision**
- **Team huddle prior to patient entry into the operating room to review completion of the checklist & to coordinate start time for opening of instruments**

The checklist was implemented with resumption of THA/TKA surgical procedures and SSI surveillance continued.



The number of THA/TKA SSIs was reduced to zero following implementation of the best practice bundle that included five key elements.

**Results:** SSI surveillance on THA/TKA procedures demonstrated zero SSIs in the 7- month time period following implementation. Not all elements were universally performed. The CHG “showers” and nasal product were most consistently implemented.

**Lessons Learned:** A multidisciplinary team approach was essential for defining the problem, identifying best practice, incorporating key elements of best practice into a useable checklist and monitoring the outcome.

**Financial Disclosure:** J. R. H. has received funds from 3M Healthcare for attending an educational conference to present the preliminary results of this implementation. 3M Healthcare had no influence on the design, execution, or analysis. Co-authors had no potential conflicts of interest.

**Contact Information:**  
Jette Hogenmiller, PhD, MN, APRN, CDE  
[jette@jetteh.us](mailto:jette@jetteh.us), 402-426-5645

Presented at the APIC National Conference in Baltimore, MD, June 2011