

# Reduction of SSIs During a One Year Study of CABG Procedures in a 393-bed Acute Care Community Hospital

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## BACKGROUND/OBJECTIVES:

The Centers for Disease Control and Prevention (CDC) estimates that 2.7% of surgical sites become infected and 14 to 16% of all annual hospital associated infections are due to Surgical Site Infections (SSIs) (AJIC, 2003). SSIs result in increased morbidity/mortality leading to increased length of stay (LOS), loss of revenue, decreased patient satisfaction postoperatively and longer recovery times. In addition, increased risk for other complications, such as delay of cardiac rehabilitation/physical therapy, may occur with SSIs.

The objective of this trial was to decrease infections post-Coronary Artery Bypass Graft (CABG) and decrease LOS while increasing patient safety, postoperative patient satisfaction and ultimately revenue.

## METHODS:

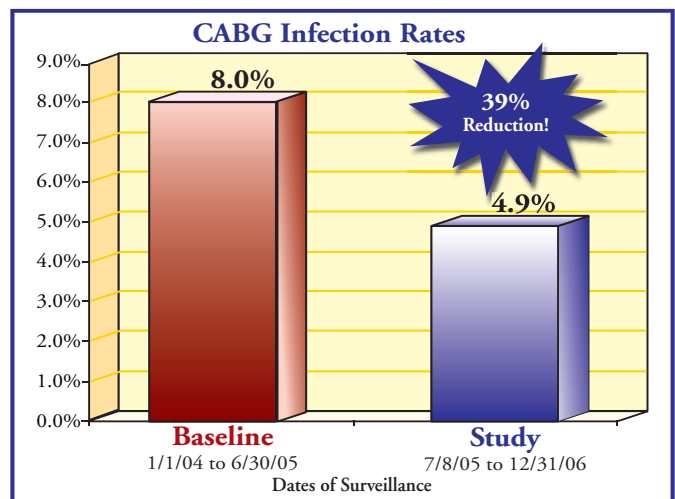
The study was a retrospective comparison of SSI rates in post surgical CABG patients using 0.2% polyhexamethylene biguanide (PHMB) impregnated island dressings vs. non-impregnated island dressings in the surgical cardiac unit of a 393-bed acute care community hospital. Data on the infection rates was collected from the Infection Control Department at the hospital utilizing criteria from the CDC which offered outcomes unbiased to this study. The baseline period consisted of cases from January 1, 2004 through June 30, 2005. The PHMB impregnated dressing evaluation began on July 8, 2005 and data was collected through December 31, 2006. The concurrent chart review was done for comparison of the number of infections and costs prior to use of the PHMB impregnated dressing in the baseline period vs. patient outcomes post implementation of 0.2% PHMB dressings in the evaluation period. In addition to the initiation of the 0.2% PHMB impregnated dressings the following performance improvement tools also were implemented but not used consistently: chlorohexidine surgical scrub, nutritional supplementation, pressure dressings, and tight blood glucose control.

## RESULTS:

During the evaluation period, infection rates decreased from 8% to 4.9%. During the evaluation period, there was an increase in the following: urgent cases (by 17%), average incision time (by 11 minutes), and LOS >6 days (by 4.5%). Historically, infection rates would increase accordingly, however infection rates dropped significantly despite these increased risk factors. Of all the SSI performance improvement changes, the only constant in this study was that *all* patients received the PHMB impregnated dressings in the Operating Room (OR) setting. Most of the previously listed SSI prevention tools were not implemented in urgent cases due to the lack of time prior to the OR. The calculated cost savings during the 18 month period for readmissions due to infections is \$264,600. Savings for outpatient treatment of infection during the same time frame are calculated at \$89,950. The total savings realized during the study period was \$354,550.

## CONCLUSIONS:

An enhanced infection control program which included the use of 0.2% PHMB impregnated island dressings in the sterile OR setting resulted in a 39% reduction in SSIs. The cost of treating SSIs at this facility declined despite the increased acuity of the patients seen over the trial period. Using PHMB impregnated dressings in procedures and in surgical settings may have helped decrease SSIs, and improve patient safety, patient satisfaction, hospital revenue, and decrease LOS.



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