# Hospital-Acquired Surgical Site Infections: Considering a simple, effective, versatile silver technology to improve patient care.

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#### **Problem:**

Surgical site infections are on the rise.

According to the CDC's National Nosocomial Infections Surveillance System, 38% of all nosocomial infections in surgical patients are surgical site infections. Of all nosocomial infections among hospitalized patients 4-16% are surgical site infections. Of patients having a surgical procedure, 2-5% will develop a surgical site infection.

When a patient develops a surgical site infection there is usually an increase in their length of stay or an unplanned return visit. In addition to the financial burden placed on our beleaguered healthcare system, surgical site infections foster the potential for a decrease in patient satisfaction as related to the care they have been provided. Surgical site infections ultimately cause unnecessary pain and financial burden placed on the patient and their family.

### Goal:

The observation will consider whether surgical site infections can be reduced by changing the surgical wound dressing from a non-adhesive petroleum emulsion dressing or a simple contact layer dressing to a non-adhesive versatile silver contact layer\* consisting of a non-occlusive polyester mesh impregnated with a polymer matrix containing hydrocolloid particles (carboxymethylcellulose), petrolatum and silver sulfate.

Even one surgical site infection is too many. It is one of our missions as healthcare providers to provide the safest care possible to our patients. This means we make every effort to decrease the incidence of surgical site infections. In continually improving our process, we want to use the best dressing possible to obtain this goal.

#### Method:

The study was an open-label, non-randomized evaluation of a silver contact layer on all surgical incisions from orthopedic surgeries and caesarean sections. Subjects of the evaluation included all orthopedic surgery patients and all caesarean section patients over a specific period of time. Surgical site infection rates were compared to all similar patient cases using a petroleum emulsion dressing for orthopedic cases and a simple non-silver contact layer dressing for caesarean sections over a 6-month period ending June 2008. *The comparison is ongoing and will end June 2009.* 

#### Implementation:

The dressing used for all total knee arthroplasties for the 6-month period ending June 2008 was a foundation of a petroleum emulsion dressing covered by three fluff gauze pads, two abdominal pad dressings and an oversized ace bandage. All other orthopedic cases for the same period used the same dressing substituting tape for a normal ace bandage as the final component of the dressing.

All caesarean sections for the same 6-month period used a simple adhesive contact layer dressing only.



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As a process change, the new silver contact layer dressing was substituted in place of the petroleum emulsion dressing for orthopedic cases and for the contact layer for caesarean sections. The staff was given an inservice and our surgical pack distributor "piggybacked" the silver contact layer to our surgical packs.

#### **Interim Results:**

During the 6-month period ending June 2008, there were a total of 589 orthopedic cases and 83 caesarean sections performed. During this period the infection rates for orthopedic cases was 0.15% and 0.09% for caesarean sections.

As of February 13, 2009, there were 61 orthopedic procedures and 53 caesarean sections performed, which used the silver contact layer. The infection rates from the period being studied is 0% for both caesarean sections and for all orthopedic cases in which the silver contact layer was used. *The study is ongoing and will end June 2009.* 

The early signs suggest a decrease in surgical site infections with the use of the silver contact layer.



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