

# **Observation of Nosocomial Surgical-Site Infection Rates with Utilization of Antimicrobial Gauze Dressing in an Acute Care Setting**

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# Observation of Nosocomial Surgical-Site Infection Rates with Utilization of Antimicrobial Gauze Dressing in an Acute Care Setting

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## INTRODUCTION

According to the Centers for Disease Control and Prevention (CDC), 2.7% of surgical procedures are complicated by nosocomial surgical-site infections (SSIs), resulting in increased morbidity, hospitalization, and costs.<sup>1</sup>

The surgical site infection rate for surgeries performed at Yuma Regional Medical Center during fiscal year (FY) ending September 2003 was 4.6, 42 infections complicating 9,114 surgeries. In recently published studies, the use of gauze impregnated with polyhexamethylene biguanide (PHMB) had reduced bacterial colonization and reduced bacterial penetration through gauze as compared to the same gauze without PHMB. When presented with the opportunity to trial this antimicrobial dressing\* for six months, the hospital products committee decided to proceed with the trial to evaluate whether the use of antimicrobial gauze dressings did indeed contribute towards a reduction of the hospital acquired SSI rates. Using attributable costs to treat a SSI (\$15,646), it was calculated that a reduction of one SSI would offset incremental cost of the antimicrobial gauze.<sup>2</sup>

## METHODOLOGY

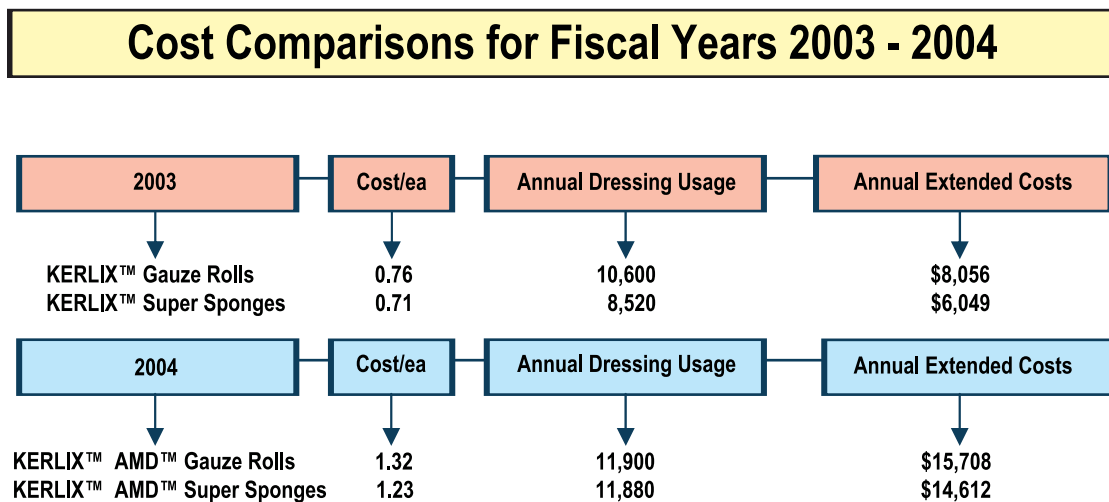
Led by the Infection Control and Clinical Education departments, this 6-month surveillance study was designed to exchange, hospital-wide, the supply of non-antimicrobial gauze dressings for gauze dressings that

contained the antimicrobial agent. As this action did not interfere with current wound care protocols, institutional staff did not require inservicing regarding the dressings' use. With the exception of the surgical service, none of the staff were alerted to the switch to the antimicrobial dressings; due to a similar label and product appearance, the dressings' packaging assisted in preserving this blind. Already in charge of tracking nosocomial SSIs, Infection Control continued collecting prospective data of SSI incidence rates from study initiation to 6 months. The data was compared to the historical control of SSIs occurring during the same time period of the previous year.

## RESULTS

During the 6-month study duration, nosocomial SSIs decreased from 23 to 11 as compared to the historical control, a reduction of 12 infections (52%). Using attributable costs to treat a SSI (\$15,646), this calculated to an estimated gross hospital savings of \$187,752.<sup>2</sup> The estimated net savings, excluding the AMD premium, was \$171,537.

At the conclusion of the study, AMD remained the primary dressing at the facility and 3<sup>rd</sup> quarter '04 results showed a reduction of 3 infections versus 3<sup>rd</sup> quarter '03, 6 infections versus a historical control of 9 (33%). The 9 month total SSI infection rate reduction versus the prior year was 47% (15 infections).



## \*PRODUCT NOTATION

KERLIX AMD Antimicrobial Dressing, Tyco Healthcare Group LP.

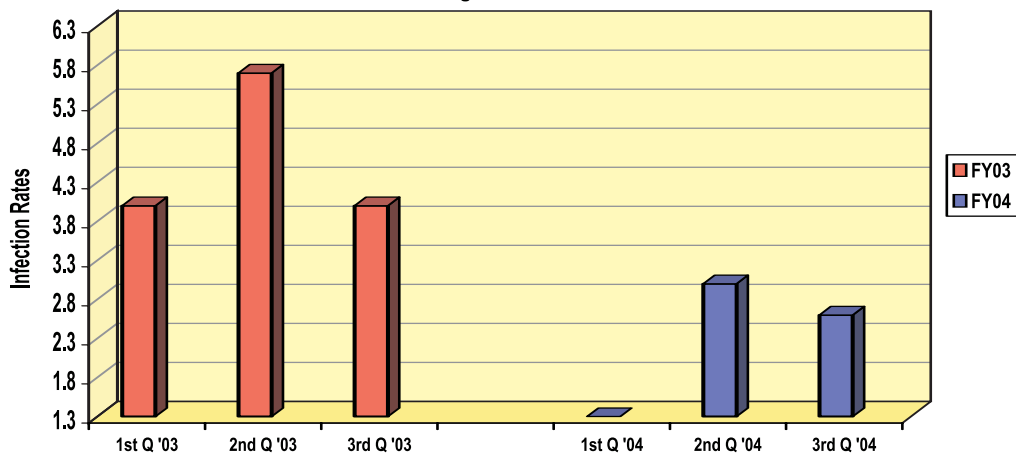
## CONCLUSION

By simply exchanging non-antimicrobial gauze dressings for antimicrobial gauze dressings, this facility may have helped reduce nosocomial SSIs, thus creating improved outcomes for the surgical patient and cost savings for the hospital.<sup>1</sup> Further research is warranted to more closely examine this noteworthy trend.

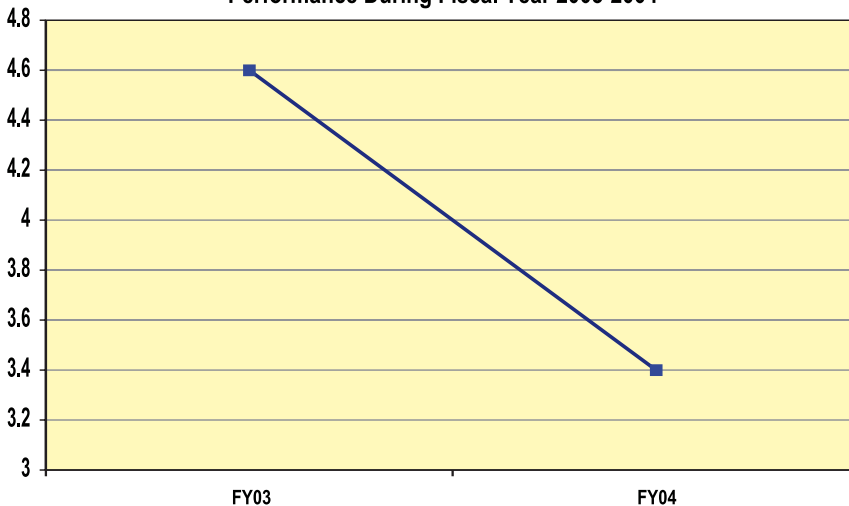
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- <sup>2</sup> Stone, PW, Larson, E, Kavar, LN. A systematic audit of economic evidence linking nosocomial infections and infection control interventions: 1990-2000. *AJIN* 2000; 30: 145-152

**Surgical Site Infection Rate During Fiscal Year 2003-2004**



**Surgical Site Infection Rate Performance During Fiscal Year 2003-2004**



## ADDITIONAL REFERENCES

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