

NEW CHN PERFORMANCE IMPROVEMENT INITIATIVES TO PREVENT PATIENT INFECTIONS USING CHLORHEXIDINE GLUCONATE (CHG) BATHS AND ORAL CARE

PREVENTING SURGICAL SITE INFECTIONS (SSIs) USING CHG BATH CLOTHS:

Of the possible surgical complications, postoperative surgical site infection (SSI) is the main contributor to patient injury, mortality, and healthcare costs. SSIs are the third most common hospital-acquired infection and patients who develop SSIs are more likely to spend time in an ICU, have 5 times the readmission rate, and have twice the mortality. Approximately 500,000 SSIs occur annually in the US.

Published results of using CHG bath cloths for pre-operative skin prep:

- The amount of CHG that remains on the skin after a no-rinse application is significantly higher than a CHG application that is rinsed off. ^(1, 2)
- 50% -70% reduction in SSI rate ⁽³⁻⁵⁾
- SSI reductions currently reported for General Surgery, Orthopedic and Obstetric patients.

Improvement in SSI rates after implementation of the new pre-surgical preparation protocol may be due to several factors including:

- the efficacy of 2% CHG cloths as a preoperative skin antiseptic
- CHG's residual effects and broad spectrum of bacterial kill
- exfoliation properties unique to the 2% CHG cloth
- improved patient compliance with the revised protocol

PREVENTING VENTILATOR-ASSOCIATED (VAP) AND HOSPITAL-ACQUIRED PNEUMONIA (HAP) USING COMPREHENSIVE ORAL CARE, INCLUDING CHG MOUTH RINSE:

Ventilator-associated pneumonia (VAP) develops in about 9% of mechanically ventilated patients admitted to the intensive care unit (ICU), leading to longer duration of ventilation and longer stay in the ICU as well as additional medical care costs of more than \$40,000 per patient case. The high rate of VAP can be reduced with a multidisciplinary approach to reduce risk.

Published results of using Comprehensive Oral Care including CHG Mouth Rinse for preventing VAP and HAP:

- Reduction of VAP rates to zero using a comprehensive program that included the use of a ventilator bundle, an oral care program, and ongoing staff education ⁽⁶⁻⁹⁾
- 45% reduction in HAP using comprehensive oral care, HOB elevation, incentive spirometry and frequent ambulation ⁽¹⁰⁾

PREVENTING MULTIDRUG-RESISTANT ORGANISM (MDRO) COLONIZATION, BACTEREMIA AND CENTRAL LINE INFECTIONS IN THE INTENSIVE CARE UNIT USING ROUTINE SKIN DISINFECTION WITH CHG CLOTHS:

Primary bloodstream infections (BSIs) are the third most common nosocomial infection reported in medical intensive care units (MICUs) in the US and 87% of these are associated with central lines. Historically, methods of interrupting pathogen transmission have focused on improving health care workers' adherence to recommended infection control practices. An adjunctive approach may be to use source control (e.g., to decontaminate patients' skin).

Published results of using daily patient bathing and skin disinfection:

- 60% reduction in vancomycin-resistant enterococcus (VRE) colonization⁽¹¹⁾
- MRSA colonization reduced 63% and MRSA bacteremia reduced 80%⁽¹²⁻¹⁴⁾

Infection Prevention and Control for more information about these initiatives or for copies of the abstracts noted below.

ABSTRACTS and PAPERS

1. Ryder M, Balbinot J. Improving skin antisepsis: 2% No-rinse CHG cloths improve antiseptic persistence on patient skin over 4% CHG rinse-off solution.
2. Edmiston CE, et al. Reducing the risk of SSIs: Evaluating skin antisepsis using 4% CHG soap versus 2% CHG-impregnated polyester cloth.
3. Rhee H, Harris B. Reducing surgical site infection. 2% CHG cloth reduces SSI rates by >70% difference resulting in a \$154,869 cost avoidance.
4. Rauk P et al. Chlorhexidine Gluconate pre-operative skin preparation initiated a 1005 reduction of incisional Cesarean section infections while other risk factors were evaluated and corrected.
5. Eiselt D. Pre-surgical skin preparation with a novel 2% Chlorhexidine Gluconate (CHG) cloth leads to decrease in surgical site infection rates in Orthopedic surgical patients.
6. Lipke V, Carnan B. Sustained reduction in Ventilator-Associated Pneumonia (VAP) using a two- Hospital, Multi-disciplinary approach that includes oral care and regular staff education.
7. Hutchins, K, Karras G, Erwin J, Sullivan K. A comprehensive oral care program reduces rates of ventilator-associated pneumonia in intensive care unit patients.
8. Bugg L, Downs L, Blankenship P. Oral care and ventilator bundle reduces VAP.
9. Belinski D. et al. IHI bundles and oral care reduce VAP and CRBSI.
10. Orr CJ, Mitchell M. Prevention of hospital-associated pneumonia using a comprehensive oral hygiene protocol.
1. Vernon MO, Hayden MK, Trick WE, Hayes RA, Blom DW, Weinstein RA. Chlorhexidine Gluconate to cleanse patients in a medical intensive care unit. *Arch Intern Med.* 2006;166:306-312.
2. Wyncoll D, Batra R, Beale R. Addition of 2% CHG baths to a bundled protocol leads to reduced rates of MRSA bacteremia and colonization.
3. Popovich KJ, et al. Effectiveness of routine cleansing with Chlorhexidine Gluconate (CHG) for infection control in intensive care units.

4. Wendt C, et al. Value of whole-body washing with Chlorhexidine for the eradication of methicillin-resistant *Staphylococcus aureus*. A randomized, placebo-controlled, double-blind clinical trial. *Infect Control Hosp Epidemiol* 2007; 28:1036-1043.