

# What the experts say

## The role of 0.12% Chlorhexidine Gluconate Oral Rinse (CHG) in the ventilated patient

Leading healthcare institutions and organizations have adopted protocols for oral care as part of their bundle of strategies used to address hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP). These oral care protocols follow a comprehensive approach aimed at key reservoirs for bacteria on the teeth as well as within the oral cavity and oropharynx. One common and consistent element of these care bundles is the inclusion of 0.12% Chlorhexidine gluconate (CHG) oral rinse. The following institutions recommend the use of 0.12% CHG as part of a comprehensive oral care protocol to address key risk factors that are known to lead to HAP and VAP.

### Recommendations & guidelines

#### **Institute for Healthcare Improvement (IHI) 2012<sup>1</sup>**

- "A 2007 British Medical Journal study concluded that oral decontamination of mechanically ventilated adults using chlorhexidine is associated with a lower risk of ventilator-associated pneumonia."
- "...it makes sense that good oral hygiene and the use of antiseptic oral decontamination reduces the bacteria on the oral mucosa and the potential for bacterial colonization in the upper respiratory tract."
- "Include daily oral care with chlorhexidine as part of your ICU order admission set and ventilator order set."
- "Develop a comprehensive oral care process that includes the use of 0.12% chlorhexidine oral rinse."

#### **Centers for Disease Control and Prevention and the Healthcare Infection Control Practices Advisory Committee<sup>2</sup>**

- "...Use an oral chlorhexidine gluconate (0.12%) rinse during the perioperative period on adult patients who undergo cardiac surgery."
- "...develop and implement a comprehensive oral-hygiene program (that might include the use of an antiseptic agent) for patients in acute care settings..."

#### **Association for Professionals in Infection Control and Epidemiology (APIC) 2009<sup>3</sup>**

- "In a meta-analysis, the incidence of VAP was significantly reduced by oral antiseptics such as chlorhexidine..."
- "Perform routine antiseptic mouth care"

#### **American Hospital Association (AHA), Health Research and Educational Trust (HRET), U.S. Department of Health and Services (HEN) 2014<sup>4</sup>**

- "Establish and implement protocols to reduce postoperative pneumonia in patients who will receive general anesthesia."
- "Consider a pre-operative CHG oral rinse the night before and the morning of surgery to reduce the risk of post-operative pneumonia for those who will be receiving general anesthesia."

#### **American Association of Critical-Care Nurses (AACN) Procedure Manual for High Acuity, Progressive and Critical Care 2017<sup>5</sup>**

- "Use of chlorhexidine oral rinse (CHG) twice daily should be part of a comprehensive oral care program for ventilated patients to reduce the incidence of VAP" - Prerequisite Nursing
- "Application of antiseptic oral rinses (chlorhexidine, cetylpyridinium chloride) added after brushing or done in conjunction with comprehensive oral care, can help reduce VAP"
- "Twice a day application of 2% and 0.12% chlorhexidine gluconate to the oral cavity with a 2-hour time period from brushing has reduced VAP rates."

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### Published outcomes

#### Does an oral care protocol reduce VAP in patients with a tracheostomy?<sup>6</sup>

- “Tooth brushing with toothpaste and applying CHG 0.12% solution may be an effective oral care protocol to reduce the VAP rate in patients in PCUs with tracheostomies who are being mechanically ventilated.”

#### A systematic approach for developing a ventilator-associated pneumonia prevention bundle<sup>7</sup>

- “Process and structural measures in proposed ventilator-associated pneumonia prevention bundle: Oral care with chlorhexidine: 2 times per day.”

#### Oral Care Protocol to Prevent Ventilator-Associated Pneumonia: Various Protocols for Oral Care with and without Chlorhexidine Gluconate (CHG) 0.12%<sup>8</sup>

- Protocol for Oral Care for Patients on a Ventilator with CHG: “...two of the 6 oral care instances need to include the use of CHG (every 12 hours).”
- “Equipment Needed: 24 hour oral hygiene kit\* (Sage #6914) which contains: 2 single-dose bottles of 3M Peridex Oral containing Chlorhexidine Gluconate 0.12%...”
- “Use of Chlorhexidine mouth rinse (part of Sage kit) for all intubated patients...”
- “Step #1 Brush teeth using suction toothbrush and accompanying Chlorhexidine Gluconate Oral Rinse q12 hours.”

**References:** **1.** How-to Guide: Prevent Ventilator-Associated Pneumonia. Institute for Healthcare Improvement. February 2012:1-45. **2.** Tablan OC, Anderson LJ, Besser R, Bridges C, Hajjeh R. Guidelines for Preventing Health-Care-Associated Pneumonia, 2003. Centers for Disease Control and Prevention. Published March 26, 2004. **3.** Greene LR, Sposato K. Guide to the Elimination of Ventilator-Associated Pneumonia. Association for Professionals in Infection Control and Epidemiology. 2009:1-47. **4.** Surgical Site Infection (SSI) Change Package. American Hospital Association, Health Research and Educational Trust, US Department of Health and Services. 2014. **5.** Wiegand DJL-MH, ed. AACN Procedure Manual for High Acuity, Progressive, and Critical Care. Vol 37. 2nd ed. St. Louis, MO: Elsevier; 2017. **6.** Conley, P. et al. Does an oral care protocol reduce VAP in patients with a tracheostomy? Nursing 2017, 43(7), 18-23. **7.** Speck, K. et al. A systematic approach for developing a ventilator-associated pneumonia prevention bundle. 2016 AJIC, 44(6), 652-656. Armstrong Institute for Patient Safety and Quality, Johns Hopkins University School of Medicine, Baltimore, MD. **8.** Oral Care Protocol to Prevent Ventilator-Associated Pneumonia: Various Protocols for Oral Care with and without Chlorhexidine Gluconate (CHG) 0.12% 2013, Armstrong Institute for Patient Safety and Quality, Johns Hopkins University School of Medicine, Baltimore, MD.