

Oral Care Program Helps Overlake Hospital Reduce VAP by 81 Percent, Saving \$1.4 Million

Overlake Hospital, a 337-bed not-for-profit regional medical center in Bellevue, Wash., has been performing oral care on patients to decrease risk factors for ventilator-associated pneumonia (VAP), a common hospital-acquired infection. Nursing staff performed oral care every four hours on patients, while respiratory therapists performed oral care every eight hours. However, the oral care program lacked oversight and continuous education, and compliance and procedure was not regularly monitored.

In the late 1990's, the hospital participated in a successful VAP reduction project, but by 2002 VAP rates slowly began to increase. By 2004, rates were higher. Hospital staff knew rates could be better and began to explore methods for regaining control of VAP and lowering rates.

"The VAP rates had risen outside of our hospital's standards," said Terry Smith, RRT, BSHAS, director of respiratory care at Overlake. "We knew we had an issue that needed to be resolved."

In November 2004, hospital leadership decided to participate in the Institute for Healthcare Improvement's (IHI) 100K Lives Campaign. The initiative aims to save 100,000 patient lives by introducing six changes in hospital procedures. Each change addresses a problem, such as preventing the incidence of ventilator-associated pneumonia (VAP). The hospital sought to lower VAP and central-line infection rates because of their impact on mortality, morbidity and hospital costs. According to the Centers for Disease Control and Prevention (CDC), nosocomial bacterial pneumonia increases mortality rates between 20 percent to 33 percent. Research reported in *Chest*, December 2002, says that VAP can increase costs by more than \$40,000 per patient, when compared to patients without VAP.

The hospital formed a multi-disciplinary team to decrease infection rates. The team included representatives from nursing, respiratory therapy, pharmacy, infection control, the intensive care unit (ICU)/respiratory care medical director and quality improvement. The hospital and team knew how oral care could lower VAP risk factors and decided to implement an organized mouth care program as well as other clinical interventions like head-of-bed elevation, sedation changes and a weaning protocol.

"Many of us were already aware of Sage Products and their oral care systems," said Smith. "Through conferences, presentations and literature review, we knew their products were well designed and easy to implement - and would ultimately help us perform good oral care."

The team reviewed the company's product offerings and selected Sage's Q-Care® Oral Cleansing and Suctioning System q8° and Sage's Untreated Suction Toothbrush, Suction Swab and Applicator Swab kit.

"Designing the packages to be posted on the wall in each patient's room was a really good idea," said Smith. "We felt the way the products were packaged would help staff monitor compliance."

The team presented the products to hospital administration and positioned the tools as "necessary" for helping lower VAP rates. They argued that Sage's oral care products were easy-to-use, visible, handy and accessible. Hospital leadership was primed to support infection control efforts and supported the group with rapid product implementation.

"I believed Sage's products would drive staff to give oral care a higher priority. The product packaging supports compliance because peers can easily see if oral care has been given. Peer pressure ensures the job will get done," said Smith.

Implementing Success

In January 2005, Overlake implemented the new products. Nursing staff and respiratory therapists were trained to use the products and taught the importance of oral care. Posters were displayed throughout the critical care unit and in each patient room to help enforce compliance and understanding. A videotape about oral care and VAP was developed and shown to all staff. In addition, the critical care unit launched a newsletter to help educate nurses about VAP, oral care and Sage's tools.

"We left no opportunity for staff not to know how to perform oral care," said Smith. "Even family and friends who visit patients learned about oral care and when it should be administered."

Oral care responsibility continues to be shared between nursing (RN) and respiratory therapy (RT). The hospital adheres to the following oral care program:

- 0400 Oral Care: Gentle cleaning with suction swab, chlorhexidine and mouth moisturizer by RT or RN.
- 0800 Brushing: Suction toothbrush and moisturizer by RN.
- 1200 Oral Care: Gentle cleaning with suction swab, chlorhexidine and mouth moisturizer by RT with ETT care.
- 1600 Brushing: Suction toothbrush and moisturizer by RN.
- 2000 Oral Care: Gentle cleaning with suction swab, chlorhexidine and mouth moisturizer by RT with ETT care.
- 2400 Brushing: Suction toothbrush and moisturizer by RN.

Through hard work, education and training, the team successfully elevated oral care to a high priority at Overlake Hospital. Oral care is no longer seen as a "nice thing to do," but as an important part of good patient care.

By February, the hospital began to see VAP rates decline. Consistent oral care, along with other clinical interventions, was having a positive effect on patient outcomes.

In the past year, the hospital experienced zero VAP cases for 10 out of the 12 months. The hospital has reduced VAP incidents by 81 percent and estimates it has saved \$1.4 million in cost avoidance from December 2004 to December 2005.

Overlake's Board of Directors and administration have applauded the team for their hard work and tremendous accomplishment. The positive results have also built a strong camaraderie among hospital staff and across many departments.

"Everyone wants to improve patient care and this effort offers a tangible result that everyone can see and take pride in," said Smith. "Through good patient care, it is possible to save lives and money."