

WakeMed Reduces Risk for Ventilator-Associated Pneumonia

Raleigh, NC.

WakeMed, a 752-bed health care network based in Raleigh, NC, has two acute care hospitals, skilled nursing facilities, ambulatory care centers and multiple outpatient physical rehabilitation sites. The New Bern Avenue campus (515 beds) has five adult intensive care units and serves as the county's only state designated trauma center.

Nurses in the surgical intensive care unit (SICU) have undertaken many approaches to prevent ventilator-associated pneumonia (VAP). Specific actions taken by nurses include cleaning their hands with alcohol-based hand rub immediately prior to any patient contact, eliminating the routine use of saline for lavage and placing the glove box and cleanser where they are easily reachable as nurses enter the room. A trial of endotracheal tubes with ports for continuous aspiration of subglottic secretions was implemented among the trauma population. The nurses also began using Sage Products' Toothette® Oral Care Kits to improve the oral hygiene of their patients. Lastly, a standing procedure of twice daily oral cleansing with a solution containing chlorhexidine was implemented for all intubated patients. As a result of the successes in the SICU at the New Bern Avenue campus, the health system will likely adapt many of these preventive measures in its other intensive care units and facilities.

Between November 2001 and July 2002, the SICU had a rate of 18.88 infections per 1,000 ventilator days. Since implementing the multi-prong approach to reduce VAP, the facility has reduced its infection rate to 16.81 infections per 1,000 ventilator days for a difference of 11 percent. The Science of Hand Hygiene cites published data from the Centers for Disease Control and Prevention that a nosocomial infection could cost an additional \$50,000 to care for a patient. While the cost of the Toothette Oral Care Kit was higher than oral care supplies previously in use, Annie James, RN, CCRN, Supervisor / Educator of WakeMed 's SICU, believes the extra cost will be offset by potentially preventing only one incident of VAP.

Discovering a New Oral Care Regimen

In the summer of 2002, James was in the early stages of a comprehensive program to prevent VAP in the unit. She conducted literature reviews to garner best practices. She then procured supplies or equipment as necessary, educated the staff and implemented the practice for one month. The effectiveness of each practice was evaluated before the next practice was introduced. One of first areas James addressed was oral care.

She had reviewed an article in the Journal of Advocate Health, "The Effect of a Comprehensive Oral Care Product on Patients at Risk for Ventilator-Associated Pneumonia," which mentioned new protocols for oral care. She contacted Peggy Lassiter, WakeMed's purchasing manager, to assist her in obtaining the right equipment for the unit. Having purchased Sage Products for WakeMed for many years, Lassiter looked to Sage for a solution.

"What caught my attention was the Sage Oral Care Kit," James said. "Its bifurcated adapter [Y-Connector] allowed for a non-interrupted, dedicated endotracheal suction line." She also liked the covered Yankauer, which allows nurses to lay the instrument down and keep it protected from potentially unclean surfaces. Nurses strive to keep their tools as clean as possible. Previously, nurses had to be creative in how to handle the Yankauer when they needed both hands during the procedure.

The Oral Care Kit included a super-soft toothbrush to perform twice-daily brushing to remove plaque.

Nurses also can quickly change to suction supplies and equipment.

"Our nurses particularly like that the swab and suction are a part of the toothbrush," James said. "Having all the supplies together in one package, plus the controlled, one-handed approach makes it more efficient for nurses to use."

Training for nurses went smoothly and took only about a week. Nurses were given a demonstration of the product prior to group report at shift change. The facility's supervisors/educators monitored the nurses' appropriate use of the oral care equipment and their compliance to the protocol. The educators also were available to answer questions for as long as the nursing staff needed them.

The SICU's objective and multi-pronged approach to reduce infection has been far reaching. In addition to VAP prevention efforts, the SICU staff also is seeing a reduction in both line-related bloodstream infections and catheter-associated urinary tract infections.

Goals

The short- and long-term goal of WakeMed is to reduce and sustain the VAP rate in the surgical intensive care unit and throughout other adult ICUs.

"Pride is instilled in the staff by allowing and promoting the use of evidence-based practices," James said. "It communicates to nursing that they can affect patient care by consistently and diligently providing oral care. This effort has promoted ownership of infection rates."

The nurses will continue to use various approaches. "We would not say that one product or strategy reduced our VAP rates, but as each product/approach was implemented, a synergistic effect was noted through a reduction in VAP rates," she said. "Reducing VAP is a highlight for this unit, and the staff is very happy."