Landmark pneumonia study leads to saved lives

In the first investigation of its kind, a Sacramento State nurse-researcher and a group of nurse leaders teamed up with Barbara Quinn, a clinical nurse specialist at Sutter General Hospital, to find out why some patients contract pneumonia in the hospital – and came up with a surprising result.

The culprit in many case of nonventilator hospital-acquired pneumonia (NVHAP), it turns out, was poor dental hygiene. And nurses generally are unaware of its dangerous consequences.

“We looked at the incidence of pneumonia and found that it is significant,” says Dian Baker, a professor of Nursing and the School Nurse Program coordinator at Sacramento State. “It’s occurring across all systems and all types of hospitals. It’s a common problem that could lead to illness and, in some cases, death. The nurse-led team did a pilot program at Sutter General in Sacramento and had remarkable results: We drove down the rates of pneumonia.”

The team’s study, “Basic Nursing Care to Prevent Nonventilator Hospital-Acquired Pneumonia,” was published in the Journal of Nursing Scholarship. It said, in part:

“This is the first study focusing on universal basic oral nursing care for prevention of NV-HAP across an entire acute-care hospital system. Nurses need clear protocols, correct equipment, resources for patient education, a team approach and administrative support to fully implement basic nursing care required to prevent HAP. NV-HAP needs to be elevated to the same level of concern, attention and effort as prevention of ventilator-associated pneumonia in hospitals.”

U.S. hospitals are required to monitor ventilated patients who contract pneumonia but not those who aren’t on ventilators, making NV-HAP an underreported and unstudied disease.

The factors that may contribute to increased risk of hospital-acquired pneumonia include older patients with a low body-mass index and signs of malnutrition, altered mental status, low albumin, and chronic or inadequately managed pain.
After determining that NV-HAP occurs in all types of medical-care systems across the country, the team members launched a pilot intervention study at the 650-bed Sutter Medical Center in Sacramento, which includes Sutter General Hospital. They discovered that nurses weren’t aware of the critical importance of oral care in reducing NV-HAP. And nursing assistants no longer used the hospital-issued toothbrushes because loose bristles fell into patients’ mouths. They also worried about providing oral care on patients who might aspirate.

Sutter Medical Center purchased new therapeutic oral care kits, which included soft-bristle, curved toothbrushes; toothpaste containing sodium bicarbonate for reducing plaque; alcohol-free antiseptic mouthwash; non-petroleum lip moisturizer; and suction toothbrushes for patients at risk for aspiration.

The nursing and support staffs were trained to use the equipment and, 12 months after Sutter instituted its oral care protocols, the overall number of NV-HAP cases decreased 37 percent.

“The avoidance of NV-HAP cases resulted in an estimated eight lives saved and 500 extra hospital days averted,” according to the study. The cost savings from avoided NV-HAP was $1.72 million.

A year’s supply of therapeutic oral-care kits cost the hospital $117,600.

“We drove down the pneumonia rate and saved lives,” Baker says. “This is one of the things I’m most proud of, being a nurse-researcher. Our motto was, ‘Saving lives one clean mouth at a time.’ ”

The other members of the research team were: Shannon Cohen, Department of Veterans Affairs Medical Center in Salem, Va.; Jennifer Stewart and Christine Lima, Kaiser Permanente-South Sacramento; and Carol Parise, Sutter Institute for Medical Research in Sacramento.

For media assistance, contact Sacramento State’s Office of Public Affairs at (916) 278-6156. – Dixie Reid

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