

## ROOTING OUT VAP AND VARIABILITY WITH INTENSIVISTS

### SAINT ELIZABETH REGIONAL MEDICAL CENTER

- ◆ Lincoln, NE
- ◆ 257 beds
- ◆ [www.saintelizabethonline.com](http://www.saintelizabethonline.com)

Saint Elizabeth Regional Medical Center, is a not-for-profit, tertiary care center affiliated with Catholic Health Initiatives.

## STEEEP

### Safe

Ventilated patients are far more likely not to develop VAP in the hospital's CCU than compared to most other hospitals.

### Timely

Daily rounds ensure all evidence-based protocols in the ventilator bundle occur, as they should.

### Effective

VAP rates are far superior to most hospitals.

### THE PROBLEM

Ventilator-associated pneumonia (VAP) is a leading cause of death among all hospital-acquired infections. Hospital death rates for ventilated patients run between 24 and 50 percent. The condition increases length of critical care unit (CCU) and hospital stays, adding about \$40,000 to the typical hospital admission. While VAP rates in Saint Elizabeth's Critical Care Unit (CCU) were below national levels, hospital officials wanted to better care for its sickest adult patients, adopt nationally recognized standards for caring for critically ill patients and optimize throughput in the CCU.

### THE SOLUTION

A patient-centered organization, Saint Elizabeth instituted an intensivist program and used the Institute for Healthcare Improvement ventilator bundle to reduce instances of VAP in the hospital's CCU.

### RESULTS

- » As of December 8, 2008, the CCU has gone 1,000 days without a case of VAP.
- » Of the 1,782 ventilator days in the CCU in fiscal year 2008, Saint Elizabeth's had zero cases of VAP, compared to a CDC benchmark of 2.7 cases of VAP.
- » As of December 8, 2008, the neo-natal ICU had gone 183 days without a case of VAP.
- » The 4.9 percent VAP rate in Saint Elizabeth's burn care unit in FY 2008 was substantially lower than the national average of 12.3 percent as measured by CDC.

### BACKGROUND

In 2004, Saint Elizabeth officials wanted to make care safer in its CCU. The CCU or ICU is a hospital's vulnerable spot—the sickest people are among the most vulnerable from getting sicker or dying from preventable events, such as VAP. About 200,000 patients die each year in U.S. hospital ICUs. Reducing a big preventable killer such as VAP was part of Saint Elizabeth's overall quality goals. It was at this time, the Leapfrog Group urged hospitals to staff ICUs with intensivists, doctors with specialized training in critical-care medicine. "That intrigued us," recalls Kim Moore, the organization's chief nursing officer. Intensivists are shown to reduce the risk of ICU patient mortality by 40 percent.

Tapping a local pulmonology group to staff the CCU with intensivists during daytime hours made sense. Saint Elizabeth leadership figured such an approach could deliver big results—lower mortality, cost, length of stay and improved patient outcomes. "We didn't have any protocols," says Barbara George, RN, director of the CCU. Unit nurses did many of the things that good medicine requires to prevent VAP, for example, but "nothing was set in stone," the way evidence-based protocols are. About one-quarter of roughly 250 patients that go through Saint Elizabeth's 16-bed ICU in a year wind up on ventilators. "The ICU patient has the most to gain, and the most to lose," says Bill Johnson, MD, intensivist and physician champion.

## TEAM MEMBERS

- » **Nancy Exstrom, RN**  
Educator and Program Lead  
in the CCU
- » **Barbara George, RN**  
Director of CCU
- » **Bill Johnson, MD**  
Intensivist and Physician Champion
- » **Robert J. Lanik**  
President and CEO
- » **Kim Moore, RN**  
Chief Nursing Officer
- » **Jay Snyder**  
Director of Respiratory Care

## PRINCIPLES OF PERFORMANCE EXCELLENCE

### Reducing Process Variation

Saint Elizabeth clinicians found that significant hospital safety improvements can be found in solutions as mundane as a mechanic's checklist. For example, is the head of each ventilated patient's bed raised 30 degrees? Check. Has each of these patients received timely oral care and suction? Check. The checklist continues with the aim of ensuring that each ventilated patient is awakened each day, gets a daily attempt at being weaned off the ventilator, receives prophylaxis to prevent peptic ulcers, another to prevent blood clots and gets other timely evidence-backed care.

"The main goal is to use evidence-based care," says Johnson "For VAP, we developed protocols with every step." This included adopting the Institute for Healthcare Improvement ventilator bundle. Previously, it was common to see three different doctors ordering labs or medicine three different ways. Now things are standardized. "We took away the human-error aspect by developing protocols," Johnson says. The intent is to deliver consistent and quality care by limiting variability.

Even selecting who works on the team is important to reducing variability. "We identified 12 therapists out of 50 to work in the CCU," notes Jay Snyder, director of respiratory care.

"You don't rotate 50 people through." While the approach took getting used to, frontline workers were open to the changes, says Nancy Exstrom, RN, educator and program lead in CCU. "The nurse is all about getting the patients better," she says. Still, this new approach invoked discipline, with nurse and other frontline workers constantly learning and being asked to participate fully in the grand rounds. "Now, [the steps] are just second nature," Exstrom says.

### Creation of High-Reliability Culture

The intensivist group implores a teamwork approach to care for CCU patients that includes physicians, nurses, respiratory therapists, physical therapists, dietitians, palliative and spiritual care advisers and others working together. "We try to set egos aside and try to take care of the patient without one person telling another what to do," Johnson says. "The teamwork approach, where everyone has the same goals in mind, helps to limit variability" in how patients are cared for, says Johnson.

All learning and teaching takes place in the interdisciplinary rounds that occur daily. The teamwork has also boosted morale. RN turnover runs less than 7 percent in the CCU, below Saint Elizabeth's overall RN turnover and lower than the 10 to 12 percent turnover in the area. "It's just made a huge difference having the same people together," says Exstrom.

Saint Elizabeth holds everyone in the organization accountable via its "4 Cs Report," reporting on measures around costs, capacity, customer service and clinical quality. Performance around VAP is one of seven strategies the organization focuses on to reduce mortality. "Each month, everyone sees how we're doing," Moore says. Half of all employee merit raises are based on quality and financial performance, reflected on the 4 Cs Report.

### CONTINUAL IMPROVEMENT

In the CCU, the team is looking to have unit nurses certified as critical-care nurses. The CCU approach has been expanded to the neo-natal intensive care unit and the burn unit. Meanwhile, following its success with the ventilator bundle, the hospital is "doing that same attack with sepsis," Moore says.