
New Study Shows Improved Protocol Reduced Sepsis Mortality Rate by 85 Percent



Sutter Solano Medical Center, in collaboration with Cheetah Medical, a Massachusetts-based leader in non-invasive fluid management technology, today announced the presentation of new study results at the Society of Critical Care Medicine's 47th Annual Critical Care Congress in San Antonio, Texas. These findings demonstrate that the use of improved sepsis detection monitoring and treatment processes reduced the sepsis mortality rate by 85 percent through collaborative efforts of the Electronic Intensive Care Unit (eICU) and Sutter Solano's ICU and Quality departments.

The results were part of a year-long study, conducted by eICU nurse Laura Maples MSN, RN, CCRN-e, to reduce the department's rate of sepsis mortality. In addition to added staff training and education, non-invasive monitoring technology from Cheetah Medical was used to actively determine IV fluid responsiveness and improve therapy guidance in septic patients. This combination of targeted and effective patient screening, monitoring and care lead to these top-level outcome improvements:

- The original mortality rate of 41.2 percent was reduced to 6.1 percent after 12 months of study—an 85.2 percent reduction
- Ten patients had far better outcomes than anticipated

Sepsis, costing over \$20 billion dollars annually, is the most expensive diagnosis to treat and the second leading cause of death in non-coronary ICUs with a mortality rate of 45 percent.¹ A 2016 report from Healthcare Cost and Utilization Project (HCUP) and the Agency for Healthcare Research and Quality shows sepsis is responsible for nearly \$24 billion in annual costs.² Additionally, central venous pressure (CVP) has frequently been used as a measure for hemodynamic stability; however, Maples' research reveals that there are now more accurate methods of measurement.

"The results from this study are a clear indicator that monitoring central venous pressure, while currently an industry standard, is a poor measure for hemodynamic stability," said Maples. "As a nurse, I've seen emerging technologies improve medical outcomes throughout my career. Today, I am inspired to see innovations like the biodynamic measurement of non-invasive cardiac output monitoring (NICOM) technology doing just that for septic patients. The study's results, which required multidisciplinary and interdepartmental collaboration, have since inspired other ICUs throughout the system to also on-board this technology."

These study results raise awareness about the benefits of additional training and education, as well as the opportunities to incorporate the use of non-invasive fluid monitoring technologies.

The oral presentation (abstract #1404), *An eICU/ICU Collaborative to Reduce Sepsis Mortality*, will be presented on Sunday, February 25, 2018 at 2:45 p.m. ET in Theatre 14.

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