Respiratory Therapists and ICU Nurses Decrease Ventilator Associated Pneumonia (VAPS), Ventilator Days and Unplanned Extubation Rate
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Problem
Ventilator Associated Pneumonia (VAP) and unplanned extubations pose a significant risk to the Intensive Care Unit (ICU) patient population through increased morbidity and mortality.\textsuperscript{1,2} The Plainview Hospital ICU proposed that implementing the TeamSTEPPs competencies related to enhanced communication would decrease the instances of VAP and unplanned extubations.

Evidence
Through implementing teamwork initiatives, organizations have found positive results. Several examples of the promising findings are:
• After team training, a 50\% reduction in adverse outcomes, based on the averaged scores after they were weighted for severity.\textsuperscript{3}
• After the implementation of a interdisciplinary communication tool to improve rounds, the average length of ICU stays were reduced by 50\%.\textsuperscript{4}
• Teamwork climates also have post-operative sepsis rates half that of the AHRQ-reported national average for the National Quality Indicator rate for post-operative sepsis.\textsuperscript{5}
• Healthcare institutions that have effectively implemented a medical teamwork system have observed a decreased clinical error rate from 30.9\% to 4.4\% along with an increase in positive attitudes toward teamwork (Morey, 2002).\textsuperscript{6}

Taking these findings and lessons learned from training events, the TeamSTEPPS (Team Strategy and Tools to Enhance Performance and Patient Safety) curriculum was developed and initially piloted in January 2005 by The Agency for Healthcare Research and Quality (AHRQ) collaboration with the Department of Defense (DoD) and the American Institutes for Research (AIR).

TeamSTEPPS is composed of four teachable-learnable skills: leadership, mutual support, situation monitoring, and communication. These are the core of the TeamSTEPPS model.

One of the tools related to communication is I PASS the BATON. The premise is that report should be done in a consistent manner in order insure that it is complete. Another tool for communication is the debrief, the goal of which is performance improvement.

Strategy
The Team STEPPS model was introduced to the ICU as part of the strategic implementation plan of Plainview Hospital. It was an interdisciplinary implementation. The respiratory therapy department is part of the ICU’s core team.
**Practice Change**
In 2008, the Respiratory Care Department introduced a bedside “I PASS the BATON” as part of the strategy to decrease ventilator associated pneumonia. In 2008, the goal was to decrease length of stay (LOS) on a ventilator for weanable patients using the TeamSTEPPS competencies, best practice weaning guidelines, and the VAP bundle. This resulted in a decrease in VAPS in 2008.

As a result of an almost three fold increase in unplanned extubations, Respiratory Therapy and Nursing collaborated on a debriefing process to learn from each of these events. The debrief consisted of reviewing key possible causes that may have led to the unplanned extubations. Debriefs were held immediately following an unplanned extubation.

**Evaluation/Results**
There have been zero VAPS in the ICU since June 2008.
There was a 15% decrease in LOS on a ventilator for weanable patients in 2009.

**Recommendations/Lessons Learned**
VAP prevention using the majority of evidence-based measures for controlling this Hospital Acquired Infection in the ICU is a difficult process that involves the accountability of many health care workers who care for ventilated patients. TeamSTEPPS competencies assisted in providing communication and process tools in enhancing the teamwork necessary align the various disciplines.

**Bibliography**