How We Eliminated Ventilator Associated Events in 12 Months

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PROJECT AIM
Mechanically ventilated patients are vulnerable to multiple complications, including ventilator-associated pneumonia, pulmonary edema, ARDS, atelectasis, thromboembolic disease, and other ventilator-associated events (VAEs). The goal of this initiative was to:
1. Identify pre-existing pulmonary infections
2. Establish the patient’s clinical admission baseline and initiate early interventions
3. Liberate patients from mechanical ventilation in a timely manner to reduce ventilator days
4. Improve patient safety and outcomes, and
5. Reduce the hospital’s VAE rate

DESCRIPTION
Ventilator associated events (VAE) may increase patient morbidity, mortality and negatively impact cost of care. A multidisciplinary team at our long-term acute care hospital (LTACH) developed an initiative to decrease VAE’s using a respiratory therapy-driven approach. The emphasis of the approach was the “admission bundle” which compressed the length of time to identify pre-existing infectious issues and ventilator problems. The pro-active approach positively impacted physician decision-making by providing necessary data for patient care upon admission to the LTACH. The multidisciplinary team included the respiratory team, Critical Care Physicians, Nursing, Laboratory, Imaging and Infection Control.

ACTION
1. The respiratory therapists initiated the VAE admission bundle for all patients admitted with an advanced airway to include:
   - Chest X-Ray (CXR)
   - Arterial blood gas (ABG) and
   - Sputum and/or Tracheal aspirate culture
2. The respiratory therapists communicated the bundle results to the ICU intensivist to insure the most appropriate respiratory care plan was initiated within the first 24 hours of admission.
3. Empiric infection treatment was ordered for patients exhibiting signs/symptoms of pulmonary infection. Interventions were based on culture and imaging results.

SUMMARY OF RESULTS
The following successes were identified after the implementation of the VAE admission bundle for advanced-airway patients:
- ZERO VAEs for a rolling 12 month period
- 59 of the 270 tracheal aspirates/sputum cultures collected within the first three days of the patient’s admission tested positive for a present-on-admission organism.
- 59 hospital-attributed VAEs were adverted

HEALTHCARE ASSOCIATED VAE DATA
HMCC IVAC & PVAP Rates thru May 2019

HEALTHCARE ASSOCIATED VAE DATA
HMCC IVAC VAE Rates thru May 2019

- VAE screening started

- NHSN Standardized Infection Ratio (SIR) – (IVAC +) SIR

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