



Results from a QI Project to Decrease Infectious Related Events in Trauma Patients at a Community Teaching Hospital

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INTRODUCTION

Ventilator associated pneumonia (VAP) is difficult to eradicate in the high-risk trauma population. High rates of VAP are linked to increased morbidity and mortality and reimbursement may be impacted as it is considered preventable. Clinical protocols (VAP bundles) have evolved to minimize VAP, however the implementation may be challenging in hospitals with limited access to financial and education resources for medical staff

OBJECTIVES

To evaluate the impact of a multidisciplinary program of evidenced based education and policy change on Ventilator Associated Pneumonia prevention in trauma patients.

MATERIALS & METHODS

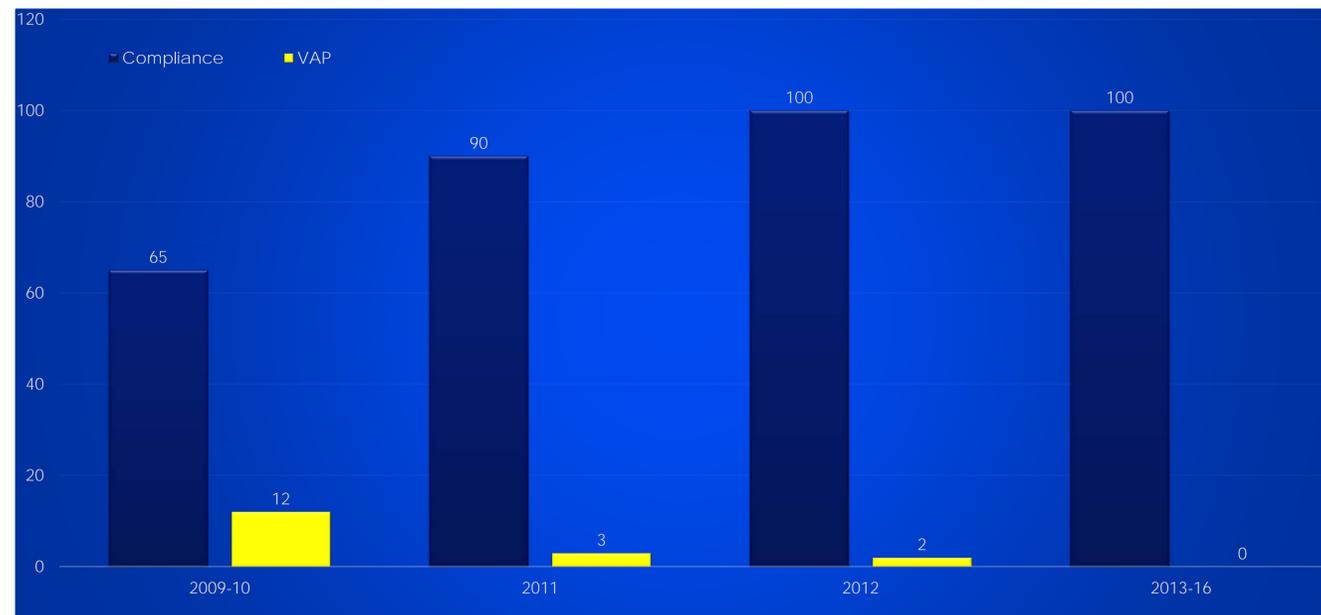
In 2009, we began to critically assess our outcomes in our high-risk trauma patients, and VAP rates were very high. A major contributing factor was thought to be the lack of evidenced based education for physician and nursing staff, as well as, an open intensive care unit (ICU) model where care was not uniformly evidenced based. A quality improvement project was developed by establishing a VAP prevention committee.

The first project was to start a closed ICU multi-disciplinary model that was staffed by ICU trained physicians. Formal training and education for the nursing and physician staff for VAP bundle prevention, and ICU sedation based on the Society of Critical Care Medicine (SCCM) guidelines was then begun.

An education grant enabled nursing and mid-level staff to attend regional trauma meetings, (2010-2014). Concurrently, the implementation of a formal VAP bundle began, and ICU sedation and mobilization practices were changed to reflect modern standards of care.

RESULTS

- During the study period (2009-2016) 2000 patients required admission to our Level II trauma center.
- The mean ISS was 33 + 12 , and there were 17% penetrating and 83% blunt trauma injuries.
- The early compliance (2010) with the VAP bundle, and ICU sedation for ventilated patients was at 65%.
- Within one year (2011) of the implementation of education and policy changes, the compliance increased to >90%.
- Over the ensuing years compliance has been carefully trended and has remained at 100%, 2012- 2016.
- All of the aforementioned interventions have resulted in a sustained dramatic decline in VAP, (2009/10-12%, 2011-3%, 2012 -2%, 2013-16 -0%.)



CONCLUSIONS

This data is continuously trended and reviewed quarterly. Ongoing education and ICU policy development has become the mainstay of our trauma ICU program. The implementation of a ICU model staffed by trained critical care specialist, and concurrently the introduction of evidenced based care, imparted a culture of excellence resulting in favorable outcomes in high-risk trauma patients related to VAP prevention. Ongoing monitoring and education is required to sustain these promising outcomes.

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