

Achieving Sustained Improvement in Reducing Ventilator Associated Pneumonia



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Abstract

The Durham VAMC implemented processes that led to sustained decreased ventilator associated pneumonia (VAP) rates in the 3 critical care units from a combined unit rate of 9.5% in Fiscal Year (FY) 2009 to 2.2% in FY 2010, and demonstrated continued and sustained improvement by achieving a combined VAP rate of 0.0% through June of FY 11.

These impressive results were the outcome of strong interdisciplinary collaboration among Nurses, Physicians, Respiratory Therapists, Infection Control, Logistics, Pharmacy, Informatics, Social Work and Hospital Leadership.

Project planning began in FY 2009 and continued through implementation of all planned strategies in FY 2010. Planning for and implementing this project was a major undertaking for many of the services involved; the success of the project was the result of strong interdisciplinary collaboration, being both patient-centered and evidence-driven. Commitment of the team members and the organization exemplified the VHA mission in action, with the Durham VAMC becoming a VA benchmark of excellence for VAP.

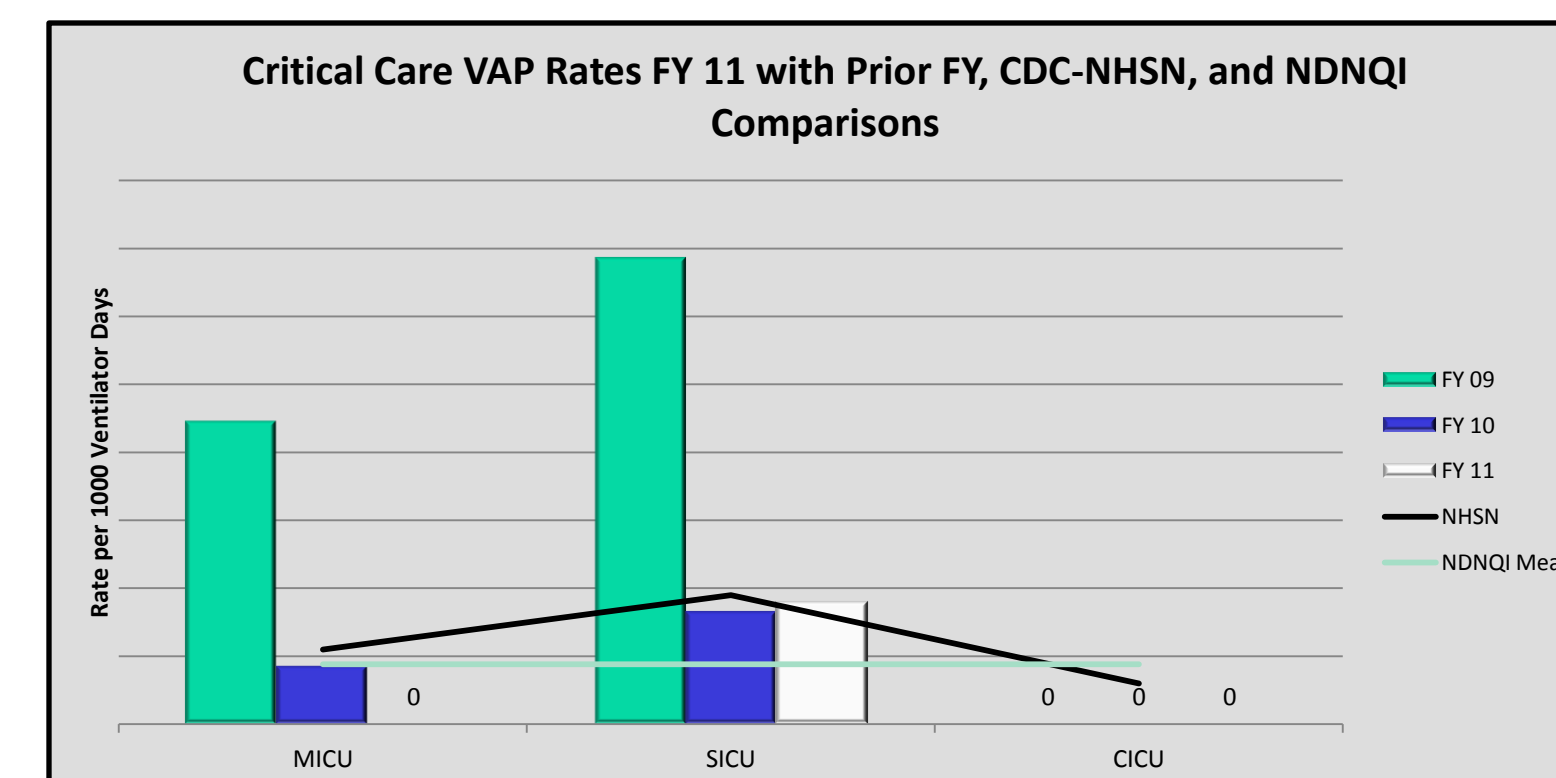
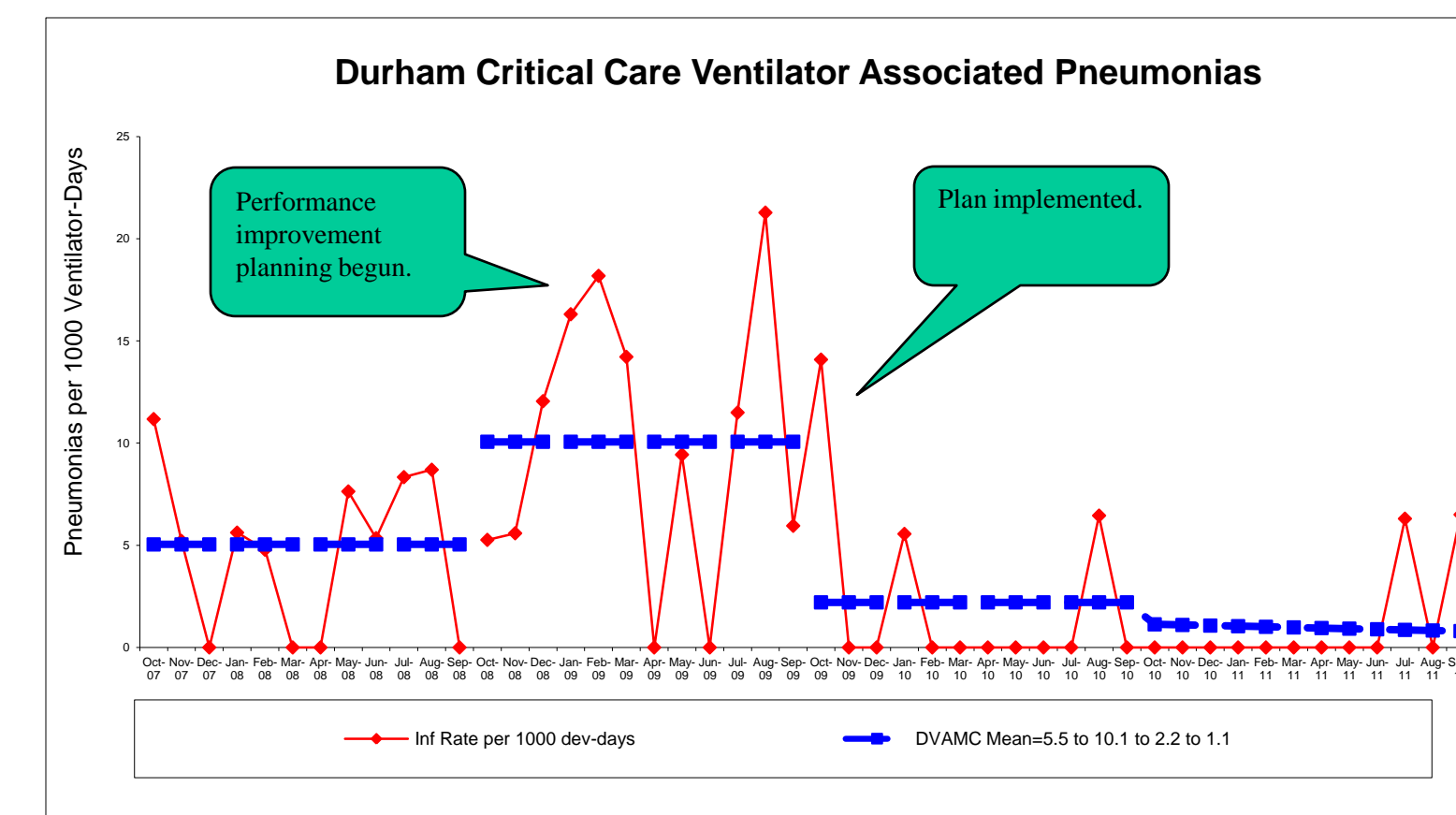
Evidence Based Interventions

- VAP Maintenance Bundle:
 - Antiseptic mouthwash twice daily in addition to every 4 hour oral care.
 - Elevate HOB 30 degrees unless contraindicated:
 - Beds have digital read out of angle of incline.
 - Daily sedation vacation and assessment for ability to extubate.
 - Hand hygiene.
 - Aseptic techniques for suctioning:
 - Closed suction system.
 - Covered sleeve on oral suction device.
- Equipment Purchase:
 - Specialized endotracheal tubes which allowed continuous aspiration of sub glottic secretions (CASS)-used for all out of OR intubations.
 - Suction regulators for CASS system.
- Bundle Compliance Monitoring: Direct observation initially.

Additional Strategies

- Computerized Record Updates:
 - VAP order set includes bundle.
 - Physician progress note template which also acted as an activity checklist.
 - Nurses note VAP bundle template.
 - Sedation score template.
- Change in sedation scale to scale with a wider range to facilitate weaning.
- Early extubation when possible.
- Physical therapy/ambulation ASAP.
- Movement of chronic ventilator patients to long term care facilities.

Results



“Bonus” Outcomes:

- 24% decrease in ventilator days from FY 10 to FY 11.
- 45% decrease in restraint rates from FY 09 to FY 11.
- Estimated cost avoidance for FY 10 and FY 11: \$579, 662.
- Estimated annual cost avoidance: \$299,491.



Lessons Learned

- Include Hospital Leadership early on.
- Embrace a multidisciplinary approach.
- Educate and reinforce to all disciplines.
- Identify process champions.
- Engage and empower staff.
- Monitor daily for at least 3 months.
- Promote and publicize results to staff.
- Celebrate success.
- Make VAP an ongoing clinical monitor.