



Successful and Sustained VAP Prevention

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Objectives & About Us

- Central DuPage Hospital is a large community hospital with 32 adult ICU beds that care for medical, surgical, and neurological patients.
- Our facility implemented the IHI *VAP-prevention bundle* in May 2007
 - Elevate head of the bed to between 30 and 45 degrees;
 - Daily “sedative interruption” and assessment of readiness to extubate;
 - Peptic ulcer disease prophylaxis; and
 - Deep venous thrombosis prophylaxis (unless otherwise indicated)
- We also initiated regular oral care every 2 hours
- *We continued to see VAP despite bundle of practices*
- *Instituted PLAN DO CHECK ACT Methodology*



Plan (Tests and Measures)

1. Track compliance with the VAP prevention bundle
2. Add compliance tracking of q2h oral care
3. Intensive change-management strategies
 - Multidisciplinary approach - evidence-based caregiver bundle, oral care protocol education
4. Staff empowerment and awards for protocol compliance
5. Family education and involvement posters
6. Qualitative metrics related to knowledge and change management
7. Quantitative metrics on compliance and VAP rates
8. Share data with staff



JCAHO National Patient Safety Goal #13 (January 2007)

- Strongly recommends that facilities encourage patients' active involvement in their own care as a patient safety strategy, and
- Defines and communicates the means for patients and their families to report concerns about safety and encourages them to do so.⁷
- This was viewed as an excellent opportunity to partner with patient families on VAP prevention
 - A comprehensive plan was implemented to ensure compliance with the prevention bundle and to empower staff and patient families to participate in bundle compliance.



Do: Posters

ZAP VAP Posters

- ZAP VAP posters were hung in the patients' rooms.
- Described the facility's promise to them and how the family could help with VAP prevention.
- These posters received positive feedback from patient families and adhered to the NPSG #13 by enhancing communications with the families of critically ill patients.

Figure 2. Family Empowerment ZAP VAP Poster

Our Promise:

As part of our commitment to providing Excellent Care, we promise to help avoid pneumonias that can occur while on a ventilator by:

- Providing oral care for your loved one every 2 hours, with brushing to clean and swab in between
- Always washing our hands prior to care
- Elevating the head of the bed to at least 30 degrees at all times
- Providing appropriate sedation and making every effort to wean the patient from the ventilator
- Never setting the resuscitation bag on the bed
- Being diligent about keeping the endotracheal tube secure and changing the tape as needed

How You Can Help:

- Wash your hands before caring for your loved one
- Ask the nurse or respiratory care practitioner what you can do to participate in your loved one's excellent care!



WORKING TOGETHER TO ZAP VAP!
(VENTILATOR ACQUIRED PNEUMONIA)



Do: Increased Monitoring

Figure 1. Adult Respiratory Performance Improvement Monitor

Date _____ Shift _____

Tooth Fairy _____ ICU ___ CCU ___ 3S ___ 5C ___

*Complete each question for every patient that is on a ventilator.
Complete survey based on direct observation and chart review.
Review the documentation for the previous 24 hours.*

1. Resuscitation bags are hung near the bed/not on the bed?
 yes no
2. ZAP VAP! Poster is visible in the room?
 yes no
3. Oral cleansing completed every 2 hours in the previous 24 hours (or applicable duration)? Check documentation as well as number of swabs used.
 yes no
4. Kits dated, timed and labeled with patient's name?
 yes no
5. Head of bed elevated to at least 30 degrees?
 yes no
6. "Y" connector is utilized to provide designated lines for oral care and continuously attached in-line suction.
 yes no
7. Ventilator tubing angled downward towards ventilator?
 yes no
8. Yankauer is completely covered by white sheath and hung at bedside appropriately.
 yes no
9. Ventilator Bundle and Ventilator Weaning Protocols utilized (critical care only).
 yes no

Barriers and How We Resolved

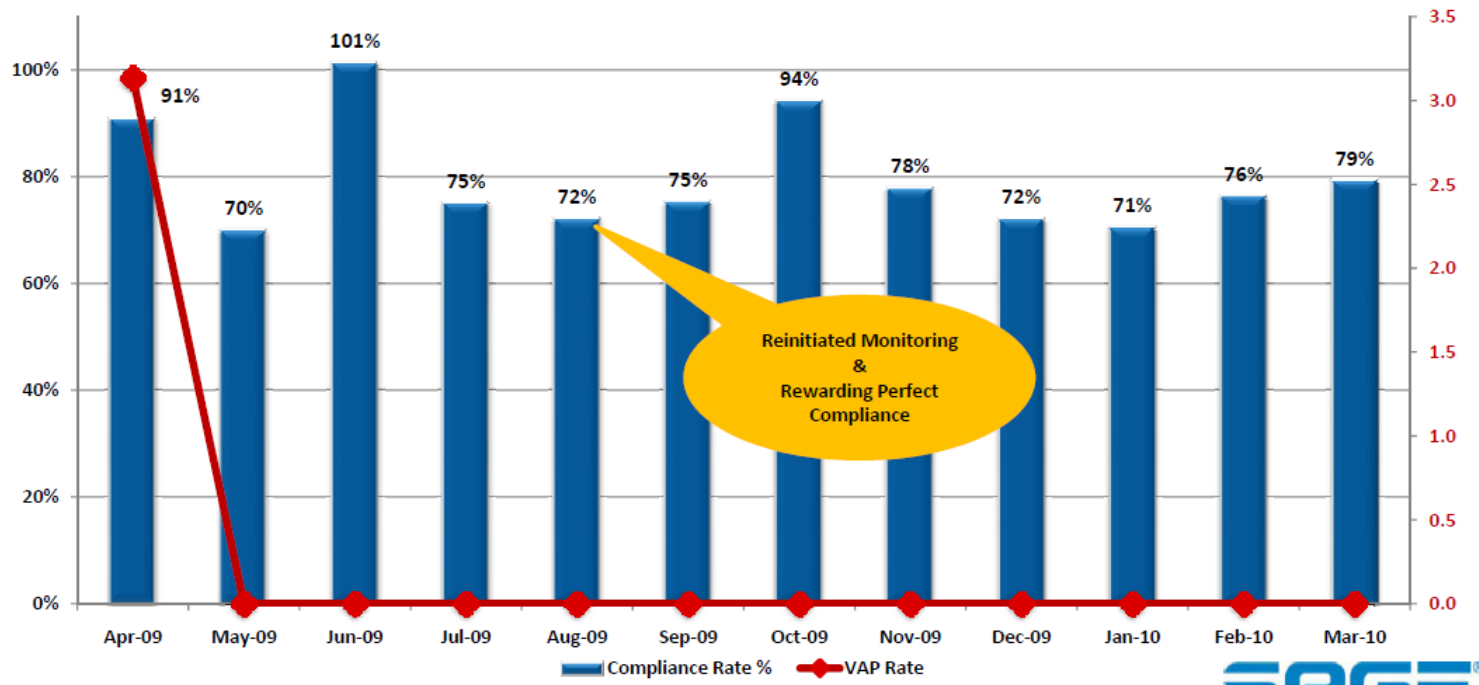
- Each time a nurse would take an oral care kit with components for 12 cleanings (24 hour kits), they would **mark the time** at which each component was due to be used before hanging at the patient's bedside.
- This helped serve as a **constant reminder** to the *nurses, respiratory therapists & the patient's family* when the next oral care treatment was due.



Check



2009 - 2010 Oral Care Protocol Utilization Product Code # 6802



Reinitiated Monitoring & Rewarding Perfect Compliance

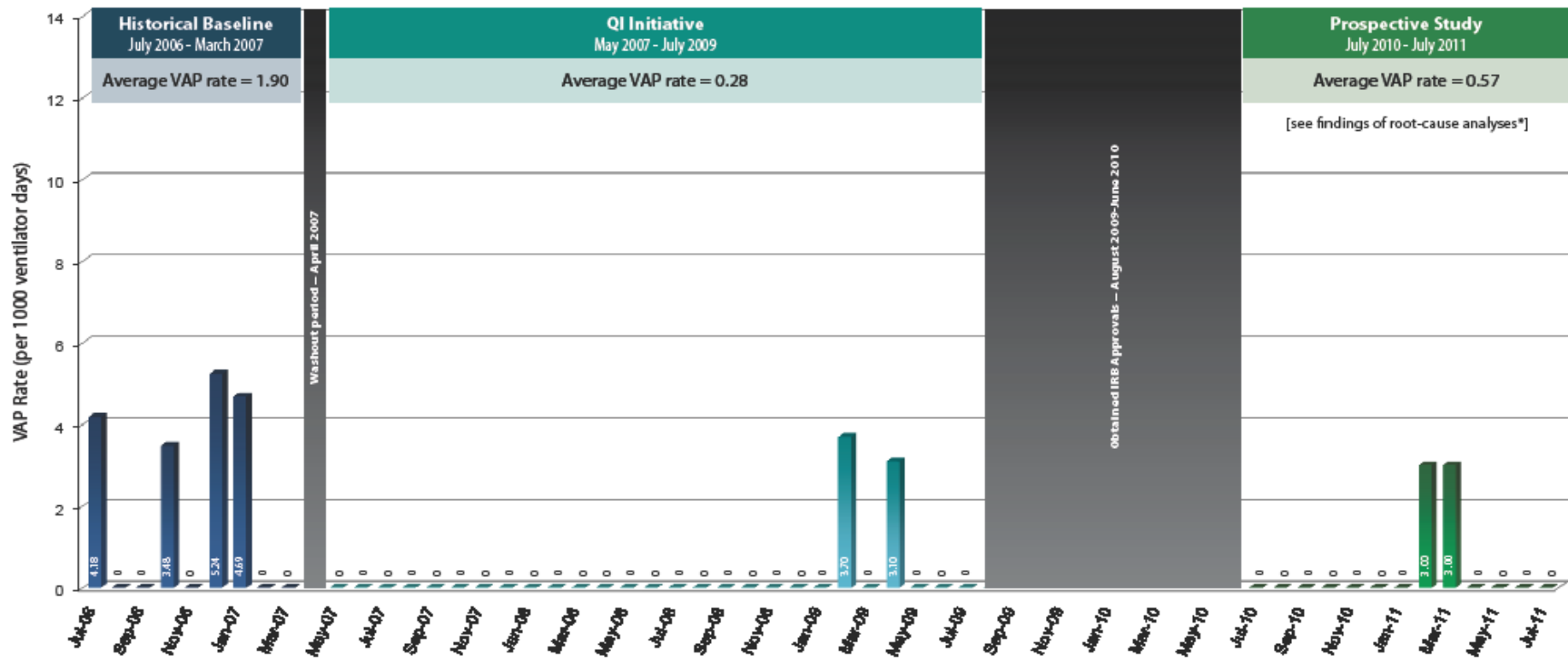


Check: Measures

- Compliance with oral care protocol increased from 30% in July 2006 to 96% by the end of 2008, and the VAP rate decreased from a rate of 1.9 (4/2089 per 1000 ventilator days) to 0.28 (2/7229 per 1000 ventilator days) during this time period. An 85% relative reduction in the VAP rate was achieved, which was statistically significant (test statistic = 6.76, $p = 0.009$)
- From July, 2009 to June 2010 (FY 2010) there were 0 VAPs (0/3411 ventilator days; 839 patients)
- From July 2010 to July 2011 (FY 2011), there were 2 VAPs (2/3339 ventilator days; 852 patients). Oral care protocol decreased from 96% in 2008 to 77% in January, 2011.



Act



* Root-cause analyses of both cases identified the common variable in both patients to be long-term ventilation (greater than 7 days). As a result, we instituted use of subglottic suction endotracheal tubes in patients ventilated on a long-term basis.



Advice For Others

- VAP prevention is a complex effort that should incorporate **multidisciplinary change-management and ongoing education**.
- Empowerment of staff and patient families was beneficial in ensuring VAP-prevention bundle compliance.
- The **use of a compliance tracking flow sheet**, **family educational posters**, **ongoing caregiver feedback** and **internal communications**, and **incentives for employing the best practices** have proved to be a successful strategy for ensuring patients in our ICUs receive the highest quality of VAP preventive care.



Wrap Up

- We currently treat a VAP as a sentinel event requiring a Root Cause Analysis to determine possible improvements.
- Questions?
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