



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY MEDICAL COMMAND
2748 WORTH ROAD
FORT SAM HOUSTON, TEXAS 78234-6000

OTSG/MEDCOM Policy Memo 11-051

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MCHO-CL-Q

Expires 22 June 2013

**MEMORANDUM FOR COMMANDERS, MEDCOM REGIONAL MEDICAL
COMMANDS**

SUBJECT: Prevention of Ventilator-Associated Pneumonia (VAP)

1. References:

a. Memorandum, Under Secretary of Defense, 14 August 2007, subject: Preventing Ventilator-Associated Pneumonia in Department of Defense Beneficiaries.

b. Institute for Healthcare Improvement (IHI) (2010). Getting Started Kit: Prevent Ventilator-Associated Pneumonia How To Guide. Retrieved from <http://www.ihl.org>.

c. Institute for Healthcare Improvement (2010). Implement the Ventilator Bundle, Retrieved from (<http://www.ihl.org/IHI/Topics>).

d. The National Healthcare Safety Network Manual Ventilator-Associated Pneumonia (VAP) Event (2009, Retrieved from <http://www.cdc.gov/nhsn/PDFs/pscManual>).

e. Division of Healthcare Quality Promotion National Center for Preparedness, (2009). The Direct Medical Cost of Healthcare-Associated Infections in US Hospitals and the Benefits of Prevention. Retrieved from <http://www.cdc.gov>.

2. Purpose: This policy memorandum incorporates strategies designed by the VAP Subject Matter Expert Working Group for implementation of evidence-based interventions for prevention of VAP. In addition, this memorandum requires centralized reporting of VAP cases and ventilator days and mandates compliance with the evidence-based interventions using standard definitions in paragraph 6.c.

3. Proponent: The proponent for this policy is the Assistant Chief of Staff for Health Policy and Services, Quality Management Division (QMD), Patient Safety Program.

4. Applicability:

a. This policy applies to all facilities providing care to patients who are intubated and ventilated in an adult Intensive Care Unit (ICU), inclusive of tracheostomy patients who are on continuous ventilation.

* This policy memo supersedes OTSG/MEDCOM Policy Memo 09-051, 26 Jun 09, subject: Prevention of Ventilator-Associated Pneumonia (VAP).

b. Exclusions: This policy does not apply to:

(1) Neonatal intensive care patients and pediatric patients (less than 18 years of age).

(2) Patients on devices such as nasal continuous positive airway pressure (CPAP, hypoCPAP). Such devices are not considered ventilators.

(3) Patients with limited time on the ventilator such as during post-anesthesia recovery.

5. Background:

a. VAP (see definition in paragraph 6.c.(2)) is the leading cause of death among patients with hospital-acquired infections, exceeding the rate of death due to central line infections, severe sepsis, and respiratory tract infections in the non-intubated patient. Patients who develop VAP have a mortality rate of 46 percent compared to 32 percent for ventilated patients who do not develop VAP. In addition, VAP is a costly complication, adding an estimated \$25,000 to a typical hospital admission. VAP prolongs time on the ventilator, length of ICU stay, and length of hospital stay after discharge from the ICU.

b. Care bundles are groupings of best practices with respect to a disease process that individually improve care, but when used together result in substantially improved care. The evidenced-based ventilator bundle promoted by the IHI's 100K Lives Campaign is one such grouping of interventions. Applying IHI's ventilator bundle can markedly reduce the incidence of VAP. The IHI ventilator bundle has five key components:

- (1) Elevating the head of the patient's bed to between 30 and 45 degrees.
- (2) Daily "sedation interruption" and daily assessment of readiness to extubate.
- (3) Administration of peptic ulcer disease (PUD) prophylaxis.
- (4) Administration of deep venous thrombosis (DVT) prophylaxis.
- (5) Administration of daily oral care with chlorhexidine.

6. Policy:

a. All ICUs caring for ventilated patients must meet the minimum standards provided in the ventilator bundle. Additional strategies beyond the five bundle components may also be utilized to improve care and should be based on medical evidence, patient population, and facility resources. Facilities that care for ventilated patients for limited periods of time (for example, less than 24 hours or patients awaiting transfer) will

implement as many of the bundle components as appropriate for the length of time the patient is at the facility (for example, elevating the head of the patient's bed, DVT prophylaxis, PUD prophylaxis).

b. The five ventilator bundle components will be tracked daily on a Ventilator Bundle Checklist. Facilities will report compliance data and VAPs to the MEDCOM QMD Patient Safety Center (PSC). Reports are due by the 5th working day of each month for the month ending 30 days prior. Data collection will be in accordance with (IAW) the criteria outlined in this memorandum.

c. Each Medical Treatment Facility (MTF) will use the following definitions IAW National Healthcare Safety Network (NHSN) guidance:

(1) Ventilator. A device to assist or control respiration continuously, inclusive of the weaning period, through a tracheostomy or by endotracheal intubation.

(2) Ventilator-Associated Pneumonia. Pneumonia that occurs in a patient who was intubated and ventilated at the time of or within 48 hours before the onset of the pneumonia. If the pneumonia develops in a patient within 48 hours of discharge from a location, indicate the discharging location on the infection report, not the current location of the patient. VAP should be so designated when reporting pneumonia data to differentiate it from other types of pneumonia (for example, bacterial pneumonia). Note: There is no minimum period of time that the ventilator must be in place in order for the pneumonia to be considered ventilator-associated.

7. Responsibilities:

a. The MEDCOM QMD PSC will collect and aggregate data and will provide reports to Regional Medical Commands and Health Policy and Services Directorate for use in ongoing quality improvement activities.

b. MTF Commanders will ensure implementation of the ventilator bundle in their facilities. Commanders will appoint appropriate individuals to collect and report data in compliance with the ventilator bundle.

c. MTF Infection Control Professionals (ICPs) will coordinate the data collected on ventilator bundle compliance and ventilator-associated pneumonia rates and report to the MEDCOM QMD PSC using the Patient Safety web-based data entry portal.

8. Procedures:

a. Implementation of the ventilator bundle. Each MTF will determine specific procedures to implement the ventilator bundle components. Standing orders for the five items in the bundle may be the most efficient method for implementing these interventions. Standing orders would require the physician to specifically discontinue the interventions if contraindications exist.

(1) Elevating the head of the patient's bed to between 30 and 45 degrees. All personnel caring for the patient have the responsibility to maintain the head of the bed elevated with minimal interruptions. Local policy will identify the individual responsible for documenting this intervention. This bundle component can be implemented in facilities that provide time-limited ventilator care prior to transfer.

(2) DVT prophylaxis. The use of standing orders is encouraged. Specific prophylaxis for DVT should be based on the patient's co-morbid conditions and risk of both DVT and bleeding. Examples of standardized order sets for Essentris™ and paper charting systems may be found in the VAP/Ventilator Bundle Toolkit located at <https://www.gmo.amedd.army.mil/ptsafety/pts.htm>. DVT prophylaxis may be considered compliant if either anticoagulant therapy or mechanical therapy is present. This bundle component can be implemented in facilities that provide time-limited ventilator care prior to transfer.

(3) PUD prophylaxis. The use of standing orders is encouraged. Specific contraindications should be identified. Examples of standardized order sets for Essentris™ may be found in the Ventilator Bundle Tool Kit. This bundle component can be implemented in facilities that provide time-limited ventilator care prior to transfer.

(4) Sedation interruption once every 24 hours. Local MTF specific policy will define the most appropriate time and process for sedation. This component may not apply to facilities that have ventilated patients for less than 24 hours. In that instance the item is considered compliant, but reported as N/A. Contraindications to the bundle component should be recorded and forwarded to the ICP for reporting.

(5) Oral care. Per IHI, as of May 2010, the recommended daily oral care includes a 0.12% chlorhexidine solution. Oral decontamination reduces the bacterial on the oral mucosa and the potential for bacterial colonization in the upper respiratory tract. This reduction in bacteria has been shown to reduce the potential for the development in ventilator-associated pneumonia for patients on mechanical ventilation. Local MTF specific policy will define the process, time frames, and products for the most effective comprehensive oral hygiene. The oral care component is considered compliant if the documentation of care is consistent with local MTF policy.

b. Data collection. Compliance with ventilator bundle.

(1) Local policy will establish the data collection process. Designated staff will collect data using the data elements contained in the enclosed Ventilator Bundle Checklist or similar checklist as locally developed. Data should be collected in a consistent manner and at a time that consistently captures the "sedation interruptions". The checklist should identify each patient on a ventilator as well as their status of compliance with each of the five components of the ventilator bundle. Patient names or other identifiers are not required, but the staff may wish to use bed numbers or patient initials to ensure they have correctly annotated the information on the checklist.

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(2) Patients with contraindications to a bundle component should be included in the data collection with the contraindication noted on the checklist. The contraindications will also be annotated on the Patient Safety web-based data entry portal for tracking and analysis.

(3) The ICP will be responsible for collating and reporting the data to the MEDCOM QMD PSC according to paragraph 6.b.

c. Data collection. Active surveillance for VAP will be continuous and ongoing. The diagnosis of VAP will be based on criteria from the National Nosocomial Infections Surveillance System (NNIS). ICPs will track and report the number of VAP cases per month. If the VAP treatment extends into two months, the case will be counted only once. Patients should be counted an appropriate number of times if the initial VAP episode resolves and an additional episode(s) (as defined by NHSN) develops.

d. Data reporting. Monthly totals for ventilator days, number of times each of the five ventilator bundle components was used, a brief narrative summary describing contraindications, and VAP rates will be reported via the Patient Safety web-based data entry portal.

FOR THE COMMANDER:


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Chief of Staff