

Prevention of Ventilator-Associated Pneumonia

Summary of Published Guidelines

Guidelines can be a valuable evidence-based resource for facilities seeking to improve their practices to reduce ventilator-associated pneumonia (VAP). Following is a summary of selected guidelines, recommendations, bundles and practice alerts for the prevention of healthcare-associated or ventilator-associated pneumonia. This summary includes guidelines from the American Thoracic Society (ATS) and Infectious Diseases Society of America (IDSA),¹ the

Centers for Disease Control (CDC),² the Canadian Critical Care Society (CCCS),³ the Agency for Healthcare Research and Quality (AHRQ),⁴ the Institute for Healthcare Improvement (IHI),⁵ the American Association of Critical Care Nurses (AACN)⁶ and Safer Healthcare Now (SHN).⁷

For the complete recommendations and supporting documentation from each organization, please refer to the published guideline or document.

ATS/IDSA evidence levels and CDC guideline categories are defined on the back page. ✓ = Included in organization's recommended practices.

Intervention	ATS/IDSA	CDC	CCCS	AHRQ	IHI	AACN	SHN
Staff education and involvement	I	IA					
Appropriate hand disinfection	I	IA					
Surveillance of ICU infections	II	IB					
Avoid intubation and reintubation when possible	I	II					
Noninvasive ventilation when possible	I	II					
Oral vs. nasal intubation and gastric tube placement	II	IB	✓				✓
Continuous aspiration of subglottic secretions	I	II	✓ (Consider)	✓		✓	✓
Maintain endotracheal cuff pressures >20 cm H ₂ O	II						
Prevent circuit condensate from entering ET tube or nebulizers	II	IB					
Adequate staffing levels in ICU	II						
Semirecumbent positioning	I	II	✓	✓	✓	✓	✓
Enteral vs. parenteral nutrition	I	Unresolved					
Routine use of selective digestive decontamination	Not recommended	Unresolved					
Routine use of oral chlorhexidine	Not recommended	Unresolved					
Daily interruption or lightening of sedation	II				✓		✓
Stress bleeding prophylaxis with either H ₂ antagonists or sucralfate	Either	Preference unresolved	Sucralfate not recommended	H ₂ antagonists	✓		✓
Change ventilator circuits only when visibly soiled. No regular changes.		IA	✓			✓	
Use of heat and moisture exchangers (HMEs)	Unresolved	Unresolved	✓				
Recommendation for closed suction or single-use open suction		No preference	Closed suction				
Kinetic beds			✓ (Consider)				
Oral hygiene program for high-risk patients		II					
Tight glycemic control	I						
Deep vein thrombosis (DVT) prophylaxis					✓		✓

ATS/IDSA Evidence Levels

EVIDENCE LEVEL	DEFINITION
Level I (high)	Evidence comes from well-conducted, randomized controlled trials.
Level II (moderate)	Evidence comes from well-designed, controlled trials without randomization or large case series with systematic analysis of disease patterns and/or microbial etiology.
Level III (low)	Evidence comes from case studies and expert opinion.

CDC Guidelines

Category IA	Strongly recommended for implementation and strongly supported by well-designed experimental, clinical or epidemiologic studies.
Category IB	Strongly recommended for implementation and supported by some clinical or epidemiologic studies and by strong theoretical rationale.
Category IC	Required for implementation, as mandated by federal or state regulation or standard.
Category II	Suggested for implementation and supported by suggestive clinical or epidemiologic studies or by strong theoretical rationale.
No Recommendation; Unresolved Issue	Practices for which insufficient evidence or no consensus exists about efficacy.

VAP Guideline References

1. Guidelines for the management of adults with hospital-acquired, ventilator-associated, and healthcare-associated pneumonia. *American Journal of Respiratory Critical Care Medicine*. 2005;171:388-416.
2. Guidelines for Preventing Health-Care-Associated Pneumonia, 2003: Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee. March 26, 2004/53 (RR03);1-36.
3. Dodek P, Keenan S, Cook D, Heyland D, et al. Evidence-based clinical practice guideline for the prevention of ventilator-associated pneumonia. *Annals of Internal Medicine*. 2004;141:305-313.
4. Shojania KG, Duncan BW, McDonald KM, et al. Making Health Care Safer: A Critical Analysis of Patient Safety Practices. Evidence Report/Technology Assessment No. 43 (Prepared by the University of California at San Francisco–Stanford Evidence-based Practice Center under Contract No. 290-97-0013), AHRQ Publication No. 01-E058, Rockville, MD: Agency for Healthcare Research and Quality. July 2001.
5. Institute for Healthcare Improvement 100,000 Lives Campaign How-to Guide: Prevent Ventilator-Associated Pneumonia. v2.01 Updated 6/14/2006. At: <http://www.ihl.org/IHI/Programs/Campaign>.
6. American Association of Critical Care Nurses. Practice Alert: Ventilator-Associated Pneumonia. 2004.
7. Safer Healthcare Now Campaign How-To Guide: Prevent Ventilator-Associated Pneumonia. At: <http://www.saferhealthcarenow.ca>.