

The 4 infection prevention Best Care Always! Interventions:

- **VAP:** Ventilator-associated Pneumonia
- **CLABSI:** Central line - associated Bloodstream Infections
- **SSI:** Surgical Site Infections
- **UTI:** Urinary Tract Infections

Best Care Always Pilot Intervention:

- Antibiotic Stewardship

Goal:

To improve the clinical outcome for the ventilated patient by preventing ventilator-associated pneumonia

A “bundle” is a collection of processes needed to effectively and safely care for patients undergoing particular treatments with inherent risks. Several interventions are “bundled” together and, when combined, significantly improve patient outcomes.

Prevent ventilator-associated pneumonia in adults

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Definition of VAP:

Pneumonia occurring in a patient:

- requiring continuous assisted ventilation[#] through either a tracheostomy or endotracheal tube;
- where the infection occurs during the period of ventilation or within 48 hours of the removal of the assisting device.
- Diagnosis of pneumonia is based on radiological features as well as clinical features of infection

This (summarised) definition must be read together with the full CDC/NHSN surveillance criteria in order to diagnose a VAP in practice.

[#] **A Ventilator:** a device to assist or control respiration continuously through a tracheostomy or by endotracheal intubation. Lung expansion devices like: intermittent positive pressure breathing (IPPB) or nasal positive end-expiratory pressure (PEEP) or continuous nasal positive airway pressure (CPAP or hypoCPAP) are NOT considered ventilators unless delivered via tracheostomy or endotracheal intubation (e.g. ET-CPAP).

Background:

- Ventilator-associated pneumonia (VAP) is the leading cause of death among healthcare associated infections. Studies show that hospital mortality of ventilated patients who develop VAP is 46% compared to 32% for ventilated patients who do not develop VAP ⁽¹⁾
- VAP leads to an extended period of mechanical ventilation and a longer length of stay (LOS) in critical care units and in hospital

Intervention:

There are key elements contained in the VAP Bundle

1. Elevate the head of the bed to 45 degrees when possible, otherwise attempt to maintain the head of the bed greater than 30 degrees
2. Daily evaluation of readiness for extubation
3. Subglottic secretion drainage
4. Oral care and decontamination with chlorhexidine
5. Initiation of safe enteral nutrition within 24-48 hours of ICU admission

<p>References and Resources:</p> <p>1. Ibrahim EH, Tracy L, Hill C, et al. The occurrence of ventilator-associated pneumonia in a community hospital: Risk factors and clinical outcomes. <i>Chest</i> 2001 Aug; 120(2):555-561.</p> <p>2. Rello J, Ollendorf DA, Oster G, et al. VAP Outcomes Scientific Advisory Group. Epidemiology and outcomes of ventilator-associated pneumonia in a large US database. <i>Chest</i>. 2002 Dec; 122(6):2115-2121.</p>	<p>Best outcomes are achieved when all elements are executed together</p> <p>Additional evidence-based components of care:</p> <ul style="list-style-type: none"> • Hand hygiene • Practices that promote patient mobility and autonomy <ul style="list-style-type: none"> • Choice of sedatives, analgesics and anti-psychotics • Delirium screening and management • Early exercise • Venous thrombo-embolism (VTE) prophylaxis <p>For more in depth information and implementation guidelines consult the <i>Canadian Safer Healthcare Now! Preventing Ventilator Associated Pneumonia Getting Started Kit</i></p> <p>The <i>Best Care Always!</i> Website contains the full Getting Started Kit</p> <p>Measuring the Intervention:</p> <ul style="list-style-type: none"> • Welsh Safety Calendar = Days with/without cases of VAP • VAP rate = (Number of cases of Ventilator-Associated Pneumonia / Number of ventilator days) x 1000 <p>Goal: e.g. decrease the VAP rate by 45% in one year</p> <ul style="list-style-type: none"> • VAP bundle compliance rate = Number of patients receiving all 5 components of the VAP bundle / number of patients sampled <p>Goal: e.g. 95% of patients who are mechanically ventilated should receive all 5 elements of the bundle</p>
<p>Safer Healthcare Now! Campaign. www.saferhealthcarenow Institute for Healthcare Improvement. 5 Million Lives Campaign www.ihl.org</p>	<p>Guiding Principles</p> <ul style="list-style-type: none"> • Adopt a campaign methodology with a bold vision. • Enlist the full endorsement of leadership at the highest levels of each hospital or hospital group in supporting and monitoring the work of improvement. • Seek areas of synergy i.e. where collective action increases the likelihood of individual success.
<p>We wish to thank and acknowledge the Institute for Healthcare Improvement (IHI) and the Canadian Safer Healthcare Now! campaigns, particularly the extensive resources made available on their websites.</p>	<ul style="list-style-type: none"> • Focus initially on a few interventions that are most likely to succeed and have evidence of effectiveness. • Define measurable objectives so that you know whether there is an improvement. • Healthcare facilities improve at their own pace and chose their own goals. We see the process as progressive and as a journey of improvement. • Collaborate using a non-punitive, all-learn, all-teach approach. Share learnings and achievements.