

## Respiratory Care Intervention and VAP Preventing Ventilator Acquired Pneumonia

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This is a review as to why a Ventilator Acquired Pneumonia (VAP) bundle protocol is necessary for critically ill patients who have an artificial airway and require ventilatory support. It will also validate the benefits of a VAP bundle protocol, Respiratory care intervention, Clinician support, and the possibility of initiating Non-Invasive Ventilation when appropriate to prevent intubation. Preventative medicine can save lives, decrease the chances of acquiring VAP, decrease hospital stay and improve quality of life.

Ventilator Acquired Pneumonia (VAP), is a hospital acquired infection that can affect anyone who is mechanically ventilated via an endotracheal tube or a tracheostomy tube for longer than 48 hours. This is a very serious infection as it can be life threatening. The need for Respiratory care intervention and evidence based practice regarding the prevention of (VAP) Ventilator Acquired Pneumonia is imperative. Evidence based practice has proven that preventative measures such as VAP Bundle Protocols are necessary to prevent this life-threatening infection.

First, let us consider the possibility of utilizing NIV- Non-Invasive Ventilation as a preventative measure. Respiratory Therapists can intervene and initiate NIV support preventing a downward respiratory spiral. Is it appropriate to consider alternative options? Yes, there are some options to consider prior to intubation such as Non-Invasive Ventilation, high oxygen flow systems and alternating different modalities to manage comfort and compliance. Keep in mind that the clock is ticking and alternative options may delay resolution. The timeframe must be a consideration along with the patient's cooperation. If the patient is hemodynamically unstable, unable to cooperate and respiratory compromised, an artificial airway is a must, thus possibly leading to Ventilator Acquired Pneumonia.

The VAP organisms known as *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Enterobacteriaceae* flood the alveoli which are air sacs in the lungs, thus preventing proper oxygenation/ventilation as the patient decompensates revealing fever, low body temperature, purulent/green sputum, and hypoxia. VAP destroys the lungs and is a common complication in the intensive care areas. This complication prolongs intubation, decreases oxygenation, and increases mortality rates. As the patient remains on a ventilator, VAP continues to grow which is why evidence based practice has validated that VAP prevention is in the best interest of the patient. A VAP bundle must be implemented to prevent this life-threatening infection, thus improving patient care, decreasing critical care stay and saving lives. It is imperative that everyone understands why there is a need for preventative care.

What is a VAP BUNDLE PROTOCOL -It consists of preventative interventions which include

1. Head of Bed elevated to 30-45 degrees
2. Feeding tubes placed beyond the pylorus of the stomach
3. Oral care every 6 hours using antiseptic mouthwash- chlorhexidine
4. Daily ventilator weaning assessment and trials completed by the Respiratory Therapist to evaluate for liberating from life support
5. Daily sedation vacation initiated by the Registered Nurse Utilize Evac tracheal tubes for subglottic drainage
6. Utilize Evac tracheal tubes for subglottic drainage
7. Utilize an inline suction system for sterility
8. Peptic ulcer and deep vein thrombosis prophylaxis

The theory behind a VAP Bundle protocol is to prevent infection, improve quality of care, prevent death, decrease intensive care needs, and minimize hospital stay which is costly. The longer a person stays mechanically ventilated, the harder it will be for that person to return to baseline. If VAP is not prevented, the patient's immune system struggles. It may take days, weeks or months for resolution. Keep in mind the longer it takes, the harder it will be for that person to walk, move, breathe, and eat, thus falling into the rehabilitation category. This prolongs their time away from home, family, and work. We must work together to limit these situations.

The American Journal of Respiratory and Critical Care Medicine discusses the complications regarding VAP and the need to implement a VAP bundle protocol along with Respiratory care intervention. In contrast to other infections which have low mortality rates, the mortality rate for VAP significantly increases due to high risk pathogens. VAP causes death and it's something that can be prevented with proper policies, protocols and interventions. Staffing ratios must be considered for good patient management. Adequate staffing of Respiratory Therapists along with Registered Nurses in critical care areas is necessary for optimal care. Keep in mind that all disciplines involved must work together. Providers, Respiratory Therapists, and Nurses along with support staff. It is a team effort. Each day that ventilatory support is needed will increase the chances of the organism growing, prolonging critical needs and hindering the chances of resuming life as it was prior to admission. Remember that good quality care is not an option.

No one wants to come to the hospital and acquire VAP. This infection has become an issue for many hospitals. VAP causes death and it is something that can be prevented with proper protocols. It is in the nation's best interest to implement and follow. It will benefit all involved. Remember that preventative medicine improves patient care outcomes and quality of life. Keep in mind, it takes an entire team of Clinicians to save one life. Let's continue working together to improve patient care.

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