Ventilator-associated Pneumonia (VAP)

Surveillance for ventilator-associated pneumonia (VAP) has been challenging. The surveillance definitions for pneumonia contain many subjective elements, including the requirement for chest x-ray evidence of pneumonia. The CDC has been working since 2009 to develop a more objective, reliable approach to VAP surveillance. During the past two years, the CDC has collaborated with several professional societies, organizations and federal partners to convene a VAP Surveillance Definition Working Group focused on finalizing a new approach to surveillance for adult patients. This new approach, VAE surveillance, was implemented for use in the National Healthcare Safety Network (NHSN) in January 2013 and has replaced in-plan VAP surveillance for adult patients.

The new term, ventilator-associated event (VAE), groups all the conditions that result in a significant and sustained deterioration in oxygenation, defined as a greater than 20% increase in the daily minimum fraction of inspired oxygen or an increase of at least three centimeters H2O in the daily minimum positive end-expiratory pressure (PEEP) to maintain oxygenation. It is imperative to understand that both infectious conditions (such as tracheitis, tracheobronchitis, and pneumonia) and noninfectious conditions (such as atelectasis, pulmonary embolism, pulmonary edema, ventilator-induced lung injury, and others) may fulfill this VAE definition. The definition is 3 tiered, as follows:

•Tier 1: Ventilator-associated condition (VAC) —the patient develops hypoxemia (as defined above) for a sustained period of more than 2 days. The etiology of the hypoxemia is not considered.

•Tier 2: Infection-related ventilator-associated complication (IVAC) —hypoxemia develops in the setting of generalized infection or inflammation, and antibiotics are instituted for a minimum of 4 days.

•Tier 3: Probable or possible ventilator-associated pneumonia (VAP) —additional laboratory evidence of white blood cells on Gram stain of material from a respiratory secretion specimen of acceptable quality, or (=possible)/and (=probable) presence of respiratory pathogens on quantitative cultures, in patients with an IVAC. Additional criteria are also available for use in meeting the possible or probable VAP definitions.

In an attempt to prevent as many cases of ventilator-associated events, our initiatives at Clark Memorial Hospital include rigorous adherence to the VAP Bundle, a new Mobility Initiative, recent institution of Chlorhexidine bath wipes and increased emphasis on hand hygiene.

Currently our numbers are slightly better than average. We are holding steady with two three VAC events per month, with an occasional IVAC and two probable or possible VAPs for the year of 2014. We have seen some improvement over the last two months with a particular physician adjusting PEEP levels to provide adequate oxygenation from day one.

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