

890. VAP to VAE: Exploring the Epidemiology of a New Surveillance Definition

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Background. Due to concerns about the subjectivity and inter-rater reliability of the surveillance definition for VAP (ventilator-associated pneumonia), a more objective outcome measure, VAE (ventilator-associated event), was released in 2013. We examined the epidemiology of the traditional VAP and new VAE measures in 6 adult intensive care units (ICUs) and hypothesized that VAE rates would be considerably higher than the traditional VAP rates and that correlation between VAEs and traditional VAPs would be low.

Methods. Traditional VAP events (TradVAP) and VAEs in six adult ICUs (medical, surgical, burn, trauma, cardiovascular, and neurosciences) at an academic medical center were determined by trained personnel for the study period from July to December 2012. VAEs were classified as a ventilator-associated condition (VAC), infection-related VAC (IVAC), and possible/probable VAP (PossVAP) based on NHSN definitions. Descriptive analyses were conducted to assess the proportion of TradVAPs that were also identified as VAEs; TradVAP and VAE rates were also compared.

Results. During the study period, 15 TradVAPs and 91 VAEs were identified in all ICUs combined. Only 8/15 (53%) TradVAPs met the VAE definition, but of these, 75% (6/8) were identified as a PossVAP; the other two TradVAPs met criteria for an IVAC only. The VAE rate was higher than the TradVAP rate across all units, but units differed in the degree of rate increase (Table).

Traditional VAP and VAE events by unit

ICU	TradVAP	VAE	VAC alone	IVAC alone	Possible/ Probable VAP	TradVAP rate per 1,000 vent days	VAE rate per 1,000 vent days	Fold increase, TradVAP to VAE rate
Burn	1	6	3	2	1	3.1	18.6	6x
Cardiovascular	1	19	6	11	2	0.8	15.6	19.5x
Medical	0	8	3	4	1	0	7.0	N/A
Neurosciences	1	14	6	6	2	1.3	17.4	13.4x
Surgical	6	20	10	8	2	5.3	17.6	3.3x
Trauma	6	24	9	3	12	4.2	16.6	4x
Total	15	91	37	34	20	2.5	15.0	6x

Conclusion. The overall VAE rate was 6-times higher than the TradVAP rate with wide variation in the degree of increase across ICU types. Only half of the identified TradVAPs were captured as a VAE event, but the majority of these VAEs were classified as a possible VAP. Further research is needed to determine causes of the VAEs in these units and the preventability of these events.

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