

This study evaluates hospital-onset bacteremia (HOB, ie, any positive blood culture obtained 48 hours post admission) as a healthcare-associated infection-related outcome measure by assessing the association between HOB and CLABSI rates and comparing the power of each to discriminate quality among intensive care units (ICUs)" Rock et al (2015).

Abstract:

BACKGROUND Central-line-associated bloodstream infection (CLABSI) rate is an important quality measure, but it suffers from subjectivity and interrater variability, and decreasing national CLABSI rates may compromise its power to discriminate between hospitals. This study evaluates hospital-onset bacteremia (HOB, ie, any positive blood culture obtained 48 hours post admission) as a healthcare-associated infection-related outcome measure by assessing the association between HOB and CLABSI rates and comparing the power of each to discriminate quality among intensive care units (ICUs).

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METHODS In this multicenter study, ICUs provided monthly CLABSI and HOB rates for 2012 and 2013. A Poisson regression model was used to assess the association between these 2 rates. We compared the power of each measure to discriminate between ICUs using standardized infection ratios (SIRs) with 95% confidence intervals (CIs). A measure was defined as having greater power to discriminate if more of the SIRs (with surrounding CIs) were different from 1.

RESULTS In 80 ICUs from 16 hospitals in the United States and Canada, a total of 663 CLABSIs, 475,420 central line days, 11,280 HOBs, and 966,757 patient days were reported. An absolute change in HOB of 1 per 1,000 patient days was associated with a 2.5% change in CLABSI rate ($P<.001$). Among the 80 ICUs, 20 (25%) had a CLABSI SIR and 60 (75%) had an HOB SIR that was different from 1 ($P<.001$).

CONCLUSION Change in HOB rate is strongly associated with change in CLABSI rate and has greater power to discriminate between ICU performances. Consideration should be given to using HOB to replace CLABSI as an outcome measure in infection prevention quality assessments.

Reference:



Rock, C., Thom, K.A., Harris, A.D., Li, S., Morgan, D., Milstone, A.L., Caffo, B., Joshi, M. and Leekha, S. (2015) A Multicenter Longitudinal Study of Hospital-Onset Bacteremia: Time for a New Quality Outcome Measure? *Infection Control and Hospital Epidemiology*. October 23rd. .

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