



**BDX proposed comments on HOB Endorsement:**  
NHSN Hospital-Onset Bacteremia & Fungemia

Thank you for the opportunity to comment regarding the Patient Safety Standing Committee's recommendation to endorse National Healthcare Safety Network (NHSN) Hospital-Onset Bacteremia and Fungemia Outcome Measure. As one of the largest global medical technology companies in the world, BD is advancing the world of health by improving medical discovery, diagnostics and the delivery of care. The company develops innovative technology, services and solutions that help advance both clinical therapy for patients and clinical process for healthcare providers.

BD is supportive of the endorsement of the measure NHSN Hospital-Onset Bacteremia & Fungemia Outcome Measure.

The development of the Central Line-associated Bloodstream Infection (CLABSI) metric resulted in considerable improvements in CLABSI rates since its introduction in 2015 and raised awareness of both infection prevention as well as antimicrobial resistance and stewardship, which are now tethered together in the recent CMS CoP ruling on Antimicrobial Stewardship. Improvement in national CLABSI rates are the result of clinicians and researchers identifying high risk practices and implementing infection prevention bundles to significantly reduce infection risks during central line catheter insertion and maintenance. However, the current focus of surveillance efforts on CLABSI may result in unintended consequences that may not optimize mitigation of Hospital-Onset Bacteremia & Fungemia (HOB) overall. In fact, a narrow focus on CLABSI could result in the placement of a vascular access device which may not be based on the patient's clinical need and risk factors. A broader measure of bloodstream infection risk to patients, such as the proposed Hospital-Onset Bacteremia & Fungemia Outcome Measure, may further augment infection prevention efforts with risks to patient safety.

Data shows that much of hospital onset bacteremia may be preventable and widening the scope of reportable infections may enhance patient safety efforts.<sup>1</sup> In a 2016 article, non-reportable hospital onset bloodstream infections incurred a 17% incremental mortality and approximately \$20,000 additional cost of care compared to propensity matched cases.<sup>2</sup> *S. aureus* is a common cause of catheter-related bloodstream infections.<sup>3</sup> While the CDC has reported a 73% reduction in *S. aureus* CLABSI nationally since the central line bundle was initiated, a recent systematic literature review found that 38% of *S. aureus* catheter-related bloodstream infections were associated with a peripherally inserted intravenous catheter.<sup>3,4</sup> Improved patient outcomes are potentially achievable given *S. aureus* infections are likely preventable, as indicated in a study evaluating the implementation of a peripheral line care bundle that demonstrated a 63% reduction in *S. aureus* infections.<sup>5</sup>

In March 2023, the American Hospital Association (AHA) published an e-book "[Hospital Onset Bacteremia: Hospital leaders' attitudes on HOB sources, prevention and treatment](#)", which included results from an October 2022 AHA Virtual Thinking Tank and a survey on perceptions of HOB by clinicians and hospital administrators. Insights from 200 executives and subject matter experts indicated a positive perception that the HOB metric would improve patient safety and care. Survey respondents identified best practices

they would like included in an HOB bundle, including more granular visibility to the sources of HOB and respective prevention measures. The results of the survey included a perceived ranking of HOB sources with central line catheters ranking first followed by urinary sources (with and without a foley catheter), respiratory sources, and wound/soft tissue/surgical site infection. While the perceptions of source contribution to HOB did not align with perceptions regarding source preventability, sources of HOB were generally thought to be preventable or partially preventable. Given the multiple sources, respondents indicated that best practices for timely pathogen identification, as well as improved definitive HOB therapy should be included in an “HOB bundle”. The survey reported that more standardized prevention workflows are needed not just for nurses and infection preventionists, but due to the multiple sources of HOB, additional focus should include the identification of the pathogen when an HOB does occur, and the time to definitive therapy to mitigate unnecessary antimicrobial use and potentially curb antimicrobial resistance.<sup>6</sup>

In summary, we believe the proposed risk-adjusted HOB measure will enhance infection prevention and antimicrobial stewardship efforts, promote evidence-based practices, and ultimately may improve patient care and outcomes. In a risk/benefit schematic, the automation of the definition of HOB as outlined by the MAP draft recommendations may help offload frontline data collection time so that infection preventionists can perform rounds in the field and help develop prevention strategies for other sources of hospital onset bacteremia. For most facilities, chart review requirements of HOB would be much less burdensome than the current requirements for CLABSI. While there may be implementation challenges at first—including visibility to the most prevalent sources of bacteremia other than central lines—we believe that an HOB metric will be used to help gage where the high impact sources are, and over time gains can be made in reduction of HOB.

Sincerely,

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<sup>1</sup> Dantes RB, Rock C, Milstone AM, Jacob JT, Chernetsky-Tejedor S, Harris AD, Leekha S. Preventability of hospital onset bacteremia and fungemia: A pilot study of a potential healthcare-associated infection outcome measure. *Infect Control Hosp Epidemiol.* 2019 Mar;40(3):358-361. doi: 10.1017/ice.2018.339. Epub 2019 Feb 18. PMID: 30773166.

<sup>2</sup> Ridgway, et al. “Performance characteristics and associated outcomes for an automated surveillance tool for bloodstream infection.” *American Journal of Infection Control.* 2016: Volume 44 , Issue 5 , 567 – 571.

<sup>3</sup> Mermel LA. Short-term peripheral venous catheter related bloodstream infections: a systematic review. *Clinical Infectious Diseases.* 2017: 65 (10): 1757-62

<sup>4</sup> Centers for Disease and Control. Vital Signs: Central Line-Associated Blood Stream Infections. Morbidity and Mortality Weekly Report. 2011; 60 (No. 9): 233-268

<sup>5</sup>Rhodes, et al. “Reducing Staphylococcus Aureus bloodstream infections associated with peripheral intravenous cannulae: successful implementation of care bundle at a large Australian health service.” *The Journal of Hospital Infection.* 19(1): 86-9

<sup>6</sup> American Hospital Association. Executive Dialogue on Hospital Onset Bacteremia: Hospital leaders’ attitudes on HOB sources, prevention and treatment. March 2023. <https://www.aha.org/sponsored-executive-dialogues/2023-03-13->

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