

## Novel Blood Collection System May Reduce Contamination Rates

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Use of a blood collection system that diverts and sequesters the initial 1.5 to 2 mL of blood was associated with a significant decrease in blood culture contamination compared to standard practice, according to an open-label trial conducted at a single ED. The results were published online in the journal *Clinical Infectious Diseases*.

An estimated 0.6% to 6% of blood cultures are contaminated. Some blood cultures may become contaminated by skin fragments colonized with bacteria that are dislodged during venipuncture. Such false-positive results lead to increased costs and harm associated with unnecessary additional testing and treatment.

Researchers at the University of Nebraska Medical Center evaluated a novel sterile blood collection system, the SteriPath initial specimen diversion device (ISDD), to determine if it could reduce contamination rates by diverting and excluding the initial portion of collected blood. Investigators evaluated 1,808 blood cultures from 904 adult ED patients at an urban 689-bed university

hospital. The patients' mean age was 59 years, and 55% were male. For each patient, the first 20-mL blood sample was obtained using a standard procedure in which blood was drawn into a syringe and then injected into blood culture vials. A second 20-mL sample was obtained using the ISDD; the initial 1.5 to 2 mL of blood was diverted into a holding chamber, and the rest of the sample was directed into the blood culture vials. A culture was determined to be contaminated if one or more of several skin-residing organisms, including coagulase-negative staphylococci, *Propionibacterium* species, *Micrococcus* species, viridans group streptococci, *Corynebacterium* species, or *Bacillus* species, was recovered from only one of the paired cultures.

Compared to standard practice, use of the ISDD was associated with a significant reduction in blood culture contamination. Overall, two of the 904 samples (0.22%) collected with the ISDD were contaminated, compared to 16 of the 904 samples (1.78%) collected via standard practice ( $P = .001$ ). Sensitivity was not affected by use of

the ISDD; true septicemia was observed in 65 of 904 samples (7.2%) collected via ISDD and 69 of 904 samples (7.6%) collected via standard procedure ( $P = .41$ ).

Rupp ME, Cavalieri RJ, Marolf C, Lyden E. Reduction in blood culture contamination through use of initial specimen diversion device. *Clin Infect Dis*. 2017 Apr 3. [Epub ahead of print]. doi:10.1093/cid/cix304.



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