



In a prospective, controlled trial at an academic center Emergency Department, a device that diverts and sequesters the initial 1.5-2mL portion of blood (which presumably carries contaminating skin cells and microbes) was tested against standard phlebotomy procedures in patients requiring blood cultures due to clinical suspicion of serious infection” Rupp et al (2017).

Abstract:

**BACKGROUND:** Blood culture contamination is a clinically significant problem that results in patient harm and excess cost.

**METHODS:** In a prospective, controlled trial at an academic center Emergency Department, a device that diverts and sequesters the initial 1.5-2mL portion of blood (which presumably carries contaminating skin cells and microbes) was tested against standard phlebotomy procedures in patients requiring blood cultures due to clinical suspicion of serious infection.

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**RESULTS:** 971 subjects granted informed consent and were enrolled resulting in 904



nonduplicative subjects with 1808 blood cultures. Blood culture contamination was significantly reduced through use of the initial specimen diversion device (ISDD) compared to standard procedure: (2/904 (0.22%) ISDD vs 16/904 (1.78%) standard practice,  $P=0.001$ ). Sensitivity was not compromised: true bacteremia was noted in 65/904 (7.2%) ISDD vs 69/904 (7.6%) standard procedure,  $P=0.41$ . No needlestick injuries or potential bloodborne pathogen exposures were reported. The monthly rate of blood culture contamination for all nurse-drawn and phlebotomist-drawn blood cultures was modeled using Poisson regression to compare the 12-month intervention period to the 6 month before and after periods. Phlebotomists (used the ISDD) experienced a significant decrease in blood culture contamination while the nurses (did not use the ISDD) did not. 73% of phlebotomists completed a post-study anonymous survey and widespread user satisfaction was noted.

**CONCLUSIONS:** Use of the ISDD was associated with a significant decrease in blood culture contamination in patients undergoing blood cultures in an Emergency Department setting.

Reference:

Rupp, M.E., Cavalieri, R.J., Marolf, C. and Lyden, E. (2017) Reduction in Blood Culture Contamination Through Use of Initial Specimen Diversion Device. *Clinical Infectious Diseases*. April 3rd. .

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