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Initial Specimen Diversion Device to Reduce Blood Culture Contamination

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Background/Problem

Blood culture contamination presents a significant burden of unnecessary cost and risks to patient care, safety, and satisfactions. Blood culture contamination costs between \$3,000-\$12,000 per occurrence. The current blood culture contamination rate is 4-6%. The national benchmark is a contamination <3%.

P-Adult patients in the emergency department requiring blood cultures

I-Diversion device

C-Standard practice

O- Reducing blood culture contamination rate

Practice Question

Does an initial specimen diversion device (ISSD) reduce blood culture contamination among adult patients in the emergency department?

Evidence Summary: Strength and Quality of Evidence

Zimmerman, et al, 2019: Modifying the order of blood resulted in 2% contamination rate compared to 5% in control group
Level 1 RCT

Lalezari, et al, 2019: Overall contamination rate with ISDT was 1.7% compared to 5% in standard practice.
Level 1 RCT

Zimmerman, et al, 2019:
1.0% contamination rate with ISDD, 5.2% contamination rate with standard practice. Level 2 Quasi experimental

Bell, et al, 2018: The use of Steripath Produced an 82.8% reduction in blood culture contamination
Level 2 Quasi experimental

Rupp, et al, 2017: Use of ISDD device resulted in 0.22% contamination rate compared to 1.78 % standard practice.
Level 2 Quasi Experimental

Recommendations for Change Based on Evidence Synthesis

The use of an ISDD is effective at reducing blood culture contamination. The emergency department at Reading Hospital is currently enrolled in a trial of the Steri-path, an initial specimen diversion device

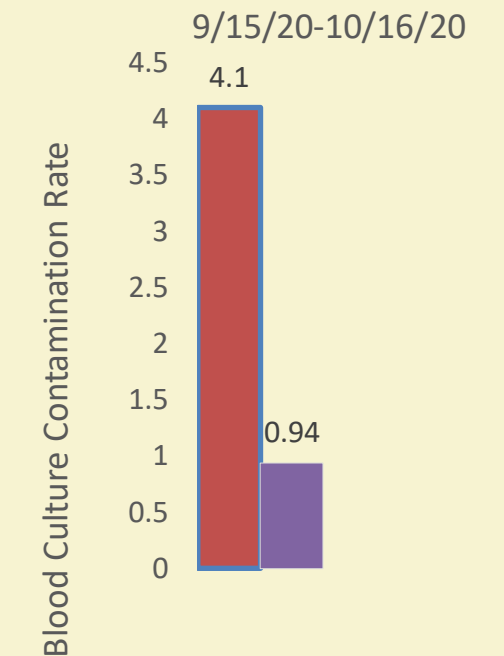
Translation of Evidence into Practice

The use of an ISDD is an effective means for reducing blood culture contamination. Other methods include changing the order of the blood draw, using a diversion, or waste tube, dedicated phlebotomist's and consistent education and awareness are also effective means to reduce blood culture contamination.

Evaluation of Practice Change/Outcomes

The Reading hospital emergency department is currently participating trial with the Steri-path (ISDD) to evaluate effectiveness in reducing blood culture contamination. In one month, use of the Steri-Path produced a 3.16 reduction in blood culture contamination in one month.

Blood Culture Contamination Rate with The Steri-Path



Database Search Strategy
PubMed, CINHAL, Medline

Keywords

Blood Culture Contamination, Initial Specimen Diversion Device, Diversion Specimen, Initial Specimen, Reducing Blood Culture Contamination

