or antibiotic treatment to help predict those at risk of CDI, and after treatment to be aware of any loss of what appear to be protective components of our microbiome.

Funding: None
Disclosures: Dr. Sabine Hazan reports that she is the founder and CEO of Ventura Clinical Trials and that she and her spouse receive salaries from the company. She also receives a salary from ProgenaBiome.
Doi:10.1017/ice.2020.1142

Presentation Type:
Poster Presentation

Decreasing Blood Culture Contamination Rates Using A Specimen Diversion Device: A Quasi-Experimental Study

Ahmed Babiker, University Of Pittsburgh; Aditi Ramakrishnan, Division of Infectious Diseases, Department of Medicine, Emory University School of Medicine; Jessica Howard-Anderson, Division of Infectious Diseases, Emory University; Jill Holdsworh, Office of Quality, Emory University Hospital Midtown, Atlanta, GA; Mini Jacob, Department of Nursing, Emory University Hospital Midtown, Atlanta, GA; Jesse Jacob, Emory University

Background: Blood culture contamination rates are frequently higher than the ≤3% standard in the emergency department (ED). Objective: We sought to determine whether the implementation of a blood diversion device that mechanically sequesters the initial aliquot of the blood culture sample decreased blood culture contamination rates. Methods: We performed a quasi-experimental study in two 500-bed hospitals. The blood-diversion device was implemented in the ED in hospital A, but not in hospital B, starting in January 2018. Preintervention data were collected over a 29-month baseline period, and postintervention data were collected for 20 months. Both hospitals provided ongoing feedback on contamination rates. Blood culture contamination was defined as presence of common skin microbiota (eg, coagulase-negative staphylococci) in only 1 of ≥2 blood culture sets collected within 24 hours. Preintervention and postintervention blood culture contamination rates were calculated based on total blood cultures collected and were compared within and between hospitals using the Wilcoxon rank-sum test. Changes in preintervention and postintervention total and ED contamination rates within hospitals were calculated as rate ratios (RRs) using interrupted time series (ITS) analysis with segmented Poisson regression. Results: Among 212,789 total blood cultures (hospital A, 70,005; hospital B, 142,784), 4,025 (1.8%) were contaminated. In hospital A, the intervention resulted in a decrease in overall median blood culture contamination rates (2.4% vs 1.4%; $P < .001$) and ED median blood culture contamination rates (4.7% vs 2.6%; $P < .001$), whereas in hospital B there was no significant change during the same period in overall (2.3% vs 2.0%) or ED (5.0% vs 5.0%) median blood culture contamination rates. In the ITS analysis, the intervention was associated with an immediate decrease in hospital A's contamination rate by 21.3% (level change RR, 0.79; 95% CI, 0.63–0.98; $P = .04$) overall and 21.0% (level change RR, 0.79; 95% CI, 0.62–1.0; $P = .06$) in the ED. After the intervention, there was a continued decrease in hospital A's overall (trend change RR, 0.95; 95% CI, 0.93–0.97; $P < .001$) and ED (trend RR, 0.94; 95% CI, 0.92–0.96; $P < .001$) blood culture contamination rates, but not in hospital B's overall (trend change RR, 1.02; 95% CI, 1.00–1.02; $P = .01$) or ED (RR, 1.00; 95% CI, 0.99–1.02; $P = .30$) blood culture contamination rates during the same period. **Conclusions:** Implementation of the blood diversion device in the ED resulted in a >20% relative reduction from a baseline of 5% of ED blood culture contamination rates. Continued improvement after implementation suggests ongoing efforts to address the workflow and the culture of safety are needed to optimize the use of this device.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1143

Figure 1A/B: Hospital A Total (A) and ED (B) Blood Culture Contamination Rates

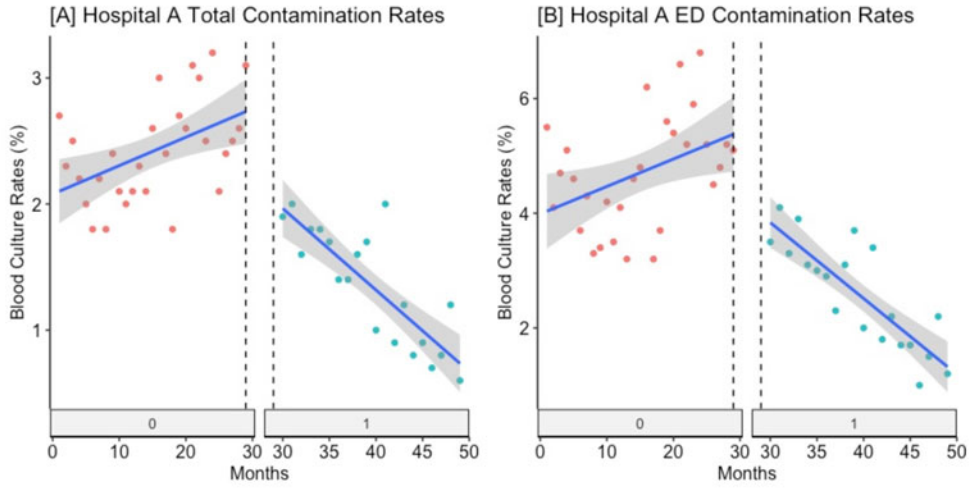

Figure 1A/B Legend: Blood culture contamination rates before (red dots) and after (turquoise dots) implementation of the intervention (dotted line [Month 29]) at Hospital A.

Fig. 1.