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Steripath Reduces Healthcare Costs Due To Blood Culture Contamination, Study Reports

Cost-benefit analysis by University of Houston's College of Pharmacy highlights clinical and economic benefits of novel device

(Houston & Seattle – November 28, 2018) – A novel technology that decreases blood culture contamination rates can also significantly reduce the healthcare costs of blood culture collection, according to groundbreaking new research by the University of Houston's College of Pharmacy.

Researchers performed a cost-benefit analysis on the routine use of the Steripath® Initial Specimen Diversion Device® (ISDD®) for blood cultures collected in the emergency department (ED), and compared the system to conventional blood culture collection methods.

“Our findings support the use of the Steripath ISDD for every single blood culture drawn in the ED. It’s a cost-effective solution to reduce both the clinical and economic impact of blood culture contamination,” said author Kevin Garey, Pharm.D., M.S., FASHP, Chair of the Department of Pharmacy Practice and Translational Research at the University of Houston's College of Pharmacy.

The peer-reviewed manuscript is the first comprehensive study of the potential cost benefit of Steripath ISDD for blood culture collection and contamination prevention. The manuscript by researchers from the College of Pharmacy now [appears online](#) and will be published in the January issue of the *Journal of Clinical Microbiology*.

“Blood culture contamination is a common event, particularly in a busy ED, and we know it’s a huge driver of healthcare costs,” Dr. Garey said. “There was already very strong clinical evidence showing a marked reduction in blood culture contamination rates with the use of the Steripath ISDD. Now this study demonstrates there is a direct associated economic advantage as well.”

In previously [published clinical research](#) from a major university medical center ED, Steripath ISDD reduced blood culture contamination from 1.78 percent down to 0.22 percent, a reduction of nearly 88 percent, sustained for 12-months.

Each year, tens of millions of patients in the U.S. require a blood culture to help diagnose sepsis and other potentially deadly bloodstream infections. However, blood draws can become contaminated with bacteria during the blood collection process. As a result, an average of 40 percent of positive results are actually false positives due to blood culture contamination. False positives in turn necessitate additional costs and clinical interventions.

The [Steripath ISDD](#) is a sterile, closed-system device that mechanically diverts, sequesters and isolates the initial 1.5 to 2.0 mL of blood, the portion known to contain contaminants. The device then opens an independent sterile blood flow path for specimen collection.

Authors of the study used data from published literature and institutional databases at an 884-bed quaternary care hospital located in the Texas Medical Center, in Houston. They calculated the attributable costs (microbiology, pharmacy and indirect costs) associated with a blood culture contamination event. They also determined the per-patient cost savings associated with routine use of the Steripath device compared to standard blood culture collection methods.

According to the study, a single false positive blood culture event results in an additional \$4,739 in hospital costs on average. Depending on a facility's baseline contamination rate (ranging from 2-8 percent), hospitals can expect a cost savings between \$83 and \$367 per blood culture following adoption of the Steripath ISDD, researchers said. This represents a total savings of more than four to eighteen times the cost of the device itself.

Extended length of hospital stay was among the indirect costs associated with blood culture contamination. Patients with contaminated blood cultures remained in the hospital an average of two days longer than patients with negative cultures (7 days vs. 5 days, respectively), contributing \$3,000 to the total hospital cost.

"Based on our data, use of the Steripath ISDD is an effective cost-saving strategy. When implemented in a hospital ED with a baseline contamination rate at the 3 percent national benchmark, Steripath was associated with an average cost savings of \$130 per blood culture," said Dr. Garey. "In a busy ED of a large 600-bed hospital -- which could easily see an average of 10,000 blood cultures per year -- this translates to a projected annual cost savings of \$1.3 million."

[View video interview](#)

About the UH College of Pharmacy

For more than 65 years, the University of Houston College of Pharmacy (UHCOP) has shaped aspiring pharmacists, scientists and researchers. The college offers graduate degrees in pharmaceutical health outcomes and policy, pharmacology and pharmaceutics, a professional pharmacy degree, combined professional/graduate degrees, and post-graduate residency and fellowship programs. With facilities on the UH campus and in the Texas Medical Center, the UHCO is accredited by the Accreditation Council for Pharmacy Education.

About Magnolia Medical

Magnolia Medical is a medical device company that develops, manufactures and markets innovative blood and bodily fluid collection devices to facilitate significant improvements in the accuracy, consistency and predictability of critical in vitro diagnostic (IVD) tests. Magnolia Medical invented and has pioneered the Initial Specimen Diversion technology platform for blood culture collection and contamination prevention. Through human factor engineering, the Steripath Initial Specimen Diversion Device® has been clinically proven to virtually eliminate blood culture contamination, which helps healthcare providers to significantly reduce false positive diagnostic results for sepsis and reduce unnecessary and inappropriate antibiotic use. This reduces the risk of CDI, MDROs and other antibiotic-related complications, length of stay and associated HACs, and unnecessary reporting of false positive CLABSI while significantly reducing hospital-wide costs. The company has amassed an IP portfolio protecting its technology and products, including more than 55 issued method, apparatus and design patents with over 50 additional patent applications pending. For more information, visit www.magnolia-medical.com.