MAGNOLIA
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Reducing False Positive Results for Sepsis with Steripath Improves Economic and Clinical Outcomes, Study Reports

Findings published in the Journal of Hospital Infection highlight the associated positive impacts of Magnolia Medical Technologies' novel Initial Specimen Diversion Device (ISDD)

(Seattle – April 17, 2019) – In the latest peer-reviewed published study on the impact of decreasing blood culture contamination rates using Steripath® ISDD®, researchers at Massachusetts General Hospital, Harvard Medical School and Wing Tech Inc. have concluded that both clinical and economic outcomes can be significantly improved.

The study performed a retrospective matched survival analysis of patients with symptoms compatible with septicemia to determine how blood culture results impact antibiotic use, length of stay, healthcare-associated conditions (HACs) and the associated healthcare costs. The study reported that the use of Steripath ISDD is a highly effective intervention for reducing costs related to false-positive blood cultures saving the average-sized hospital $1.9 million annually and preventing 34 HACs, including three *Clostridium difficile* infections.

This analysis, led by health economics analysis firm Wing Tech Inc., builds on the numerous clinical studies that have demonstrated sustained clinical and economic improvement by reducing blood culture contamination using Steripath. The manuscript is now available online and will be published in an upcoming issue of the *Journal of Hospital Infection.*

"Our study, using contemporary data from the U.S. healthcare system, confirms the substantial clinical and economic burden associated with contaminated blood cultures," said Benjamin Geisler, M.D., M.P.H., Senior Consultant at Wing Tech Inc., and Attending Physician, Department of Medicine, Massachusetts General Hospital/Harvard Medical School. "The Steripath Initial Specimen Diversion Device can be expected to decrease the clinical burden and unnecessary healthcare utilization that leads to billions of dollars of avoidable U.S. healthcare costs each year."

Each year, tens of millions of patients in the U.S. require blood cultures to help diagnose blood stream infections and sepsis. However, blood cultures can become contaminated with bacteria during the collection process. As a result, an average of 40% of positive results are actually false-positive due to blood culture contamination.

False-positives in turn lead to a longer length of stay and a substantial number of clinical interventions and additional costs.

According to the study, a single false-positive blood culture event results in an additional 2.4 days stay in the hospital for the patient, $4,817 in incremental hospital costs on average and a $7.5 billion burden on the U.S. healthcare system. Standardizing to the Steripath ISDD was determined to be the most effective method to address this, even for hospitals with dedicated phlebotomy teams.

The Steripath Gen2 ISDD is a sterile, vein-to-bottle 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 a second independent sterile blood flow path for specimen collection. Five peer-reviewed publications support the clinical and cost-effectiveness of Steripath with reductions of blood culture contamination rates by as much as 92% with sustained rates as low as 0.2% in the Emergency Department.[1,2,3,4,5]

“The significant avoidable patient harm and costs caused by false positive blood cultures have been recognized for decades. However, conducting detailed analysis to pinpoint internal cost savings is always a challenge for hospitals,” said Greg Bullington, CEO of Magnolia Medical. “This rigorous and exhaustive research provides hospital administrators with a powerful tool to validate the economic value Steripath delivers as a highly ROI positive solution that improves patient safety and enables antibiotic stewardship while saving the typical 250-400 bed hospital nearly $2 million per year.”

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) laboratory tests. Magnolia Medical invented and patented the initial specimen diversion technique (ISDT™) and device (ISDD®) for blood culture collection and contamination prevention. The Steripath ISDD has been shown in peer-reviewed published clinical studies to reduce blood culture contamination — which in turn helps healthcare providers decrease false-positive diagnostic results for sepsis and the resulting unnecessary and inappropriate antibiotic use. This reduces the risk of Clostridium difficile infections, multi-drug-resistant organisms and other antibiotic-related complications, hospital length of stay, associated healthcare-acquired infections, and hospital-wide costs.[1,2,3,4,5,6] The company has amassed an intellectual property portfolio protecting its technology and products, including more than 60 issued method, apparatus and design patents with more than 50 additional patent applications pending. For more information, visit www.magnolia-medical.com.

1. **M. Rupp, *et al*;** Reduction in Blood Culture Contamination Through Use of Initial Specimen Diversion Device. *Clinical Infectious Diseases* (August 2017
2. **M. Bell, *et al*;** Effectiveness of a Novel Specimen Collection System in Reducing Blood Culture Contamination Rates. *Journal of Emergency Nursing* (April 2018)
3. **F. Zimmerman, *et al*.** Reducing blood culture contamination using an initial specimen diversion device. *American Journal of Infection Control* (January 2019)
4. **E. Skoglund, *et al*.** Estimated clinical and economic impact through use of a novel blood collection device to reduce blood culture contamination in the emergency department: A cost-benefit analysis. *J. Clin. Microbiol* (January 2019)
5. **B. Geisler, *et al*.** A Model to Evaluate the Impact of Hospital-Based Interventions Targeting False-Positive Blood Cultures on Economic and Clinical Outcomes. *Journal of Hospital Infection* (March 2019)
6. **D. Chang, *et al***. (2017). Impact of Blood Culture Diversion Device and Molecular Pathogen Identification on Vancomycin Use. Society of Healthcare Epidemiology of America (SHEA) Conference.