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Lee Health Pioneers Blood Culture Collection System, Significantly Improving Patient Safety Around Sepsis

New technology lowers healthcare costs and significantly reduces unnecessary antibiotic use

(Fort Myers, Fla. – June 7, 2018) – Lee Health clinicians have reported an 83% reduction in false positive diagnostic results for bloodstream infections like sepsis, following the adoption of a new blood culture collection system. The collection system has been implemented in the health system’s four emergency departments at Lee Memorial Hospital, Cape Coral Hospital, Gulf Coast Medical Center and HealthPark Medical Center.

“The ED is the gateway to the hospital for so many patients, so anything we can do to improve diagnostic accuracy has a significant impact on patient care,” says Mary Bell, MS, RN, CEN, Nurse Manger of the Lee Memorial Hospital Emergency Department. “We’ve worked for years to reduce our blood culture contamination rates. We implemented the [Steripath Initial Specimen Diversion Device®](#) (ISDD®) which removes contaminants often found when blood is drawn using standard methods. It led to an immediate, statistically significant reduction in our contamination rates, providing a major improvement in safety for our patients.”

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. “Sepsis is a multisystem organ dysfunction caused by infection. Early detection and timely treatment are significant determinants of survival because every hour treatment is delayed, decreases a patient’s chance of survival. Sepsis, including septic shock, carries a high mortality rate of approximately 15-60 percent,” said Marilyn Kole, M.D., Lee Health Vice President of Clinical Transformation. However, when standard practices are followed, an average of 40% positive results are actually false positives due to blood culture contamination. For instance, the blood may

become contaminated with bacteria-containing fragments of a patient's skin that enter the needle during the blood culture collection process.

A sterile, closed-system device, the Steripath ISDD mechanically diverts, sequesters, and isolates the initial 1.5-2.0 mL of blood, the portion known to contain contaminants. The device then opens an independent, second sterile blood flow path to the culture bottles. The technology has been clinically proven to virtually eliminate blood culture contamination that can lead to the misdiagnosis of bloodstream infections like sepsis.

"Early detection and treatment of sepsis are critical," said Aaron Wohl, M.D., an attending physician in the emergency department at Lee Memorial Hospital and HealthPark Medical Center who is actively involved in Lee Health's sepsis reduction initiative. "By giving us more reliable blood cultures, the new device helps clinicians make a more accurate diagnosis of sepsis and avoid unnecessary and inappropriate antibiotic treatment and the associated risks of developing antibiotic resistant infections and Clostridium difficile. Reducing the number of patients who might otherwise receive unnecessary antibiotic therapy can also help prevent antimicrobial resistance, which is a serious and growing public health threat."

The new process is expected to impact healthcare costs associated with false-positive blood cultures and the expense and potential complications of unnecessary antibiotic treatment. The cost of a single false-positive blood culture can approach \$10,000 because of the cost and potential complications of subsequent antibiotic therapy. Lee Health estimates the system-wide cost savings could be between \$4.3 and \$10.8 million annually with the technology implemented throughout Lee Health. (Watch an informational video at https://youtu.be/3RQzaVZy_e8).

"Quality patient care ultimately means getting the right diagnosis for the right patient and giving them the most appropriate treatment for the right amount of time," said Dr. Kole. "These results clearly demonstrate this technology is an efficient, cost-effective way to improve patient care by reducing blood culture contamination, even in a busy, dynamic clinical setting like the ED."

About Lee Health

Since the opening of the first hospital in 1916, Lee Health has been a healthcare leader in Southwest Florida, constantly evolving to meet the needs of the community. A non-profit, integrated healthcare services organization, Lee health is committed to the well-being of every individual served, focused on healthy living and maintaining good health. Staffed by caring people, inspiring health, services are conveniently located throughout the community in four acute care hospitals, two specialty hospitals, outpatient centers, walk-in medical centers, primary care and specialty physician practices and other services across the continuum of care. Learn more at www.LeeHealth.org.

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