

## DIAGNOSTICS IN THE FIGHT AGAINST SEPSIS: THE NEED FOR SPEED

#### MORTALITY RATE -INCREASES BY 7.6%

Mortality rate increases 7.6% for each hour that appropriate antimicrobial therapy is delayed after the onset of hypotension<sup>1</sup>

#### 

Reduction in sepsis mortality is directly dependent on early identification and rapid initiation of appropriate antimicrobial therapy<sup>1</sup>

#### CONTRIBUTION TO ANTIMICROBIAL RESISTANCE

Until sepsis is diagnosed, broad spectrum antibiotics are used to treat patients, which can contribute to antimicrobial resistance<sup>2</sup>



As many as **80% of sepsis deaths could be prevented** with rapid diagnosis and appropriate treatment<sup>1</sup>

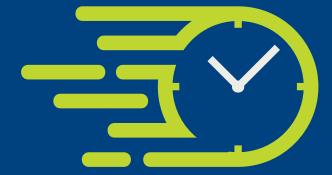
# APPROPRIATE ANTIBIOTIC THERAPY Timely identification and antibiotic susceptibility testing can inform actionable treatment decisions

#### **EARLY DETECTION**

Measuring specific biomarker levels can quickly differentiate patients with sepsis and determine severity<sup>3</sup>

#### **RISK ASSESSMENT OVER TIME**

Assessing biomarker levels over time can help monitor effectiveness of antimicrobial therapy and a patient's response to treatment<sup>4</sup>



If we treat sepsis in a timely manner, we can save lives and curtail hospital costs

#### FIRST HOUR FOR SEPSIS PATIENTS IS CRITICAL:

- Administration of the appropriate antibiotic within first hour after hypotension is associated with a survival rate of 80%<sup>1</sup>
- Shorten length of hospital stay
- Reduce emergence of multi-drug resistant bacteria

#### QUICKLY DETECTING SEPSIS WITH THE AID OF SPECIFIC BIOMARKERS HAS BEEN SHOWN TO:

- Save an average of \$2,759 per patient<sup>3</sup>
- Lead to an average of 1.2 fewer hospital days<sup>5</sup>

### HOSPITALS SPEND OVER \$27 BILLION ON SEPSIS EACH YEAR<sup>6</sup>

Extended length-of-stay, high readmission rates, and cost of antibiotics play a role<sup>7</sup>

#### REFERENCES:

• BIOM

bioMér

1. Zanotti-Cavazzoni S. Duration of hypotension before initiation of effective antimicrobial therapy is the

critical determinant of survival in human septic shock. Yearbook of Critical Care Medicine. 2007; 2007:187-188. doi:10.1016/s0734-3299(08)70339-3.
2. Sinha M, Jupe J, Mack H, Coleman TP, Lawrence SM, Fraley SI. Emerging Technologies for Molecular Diagnosis of Sepsis. Clinical Microbiology Reviews. 2018;31(2). doi:10.1128/cmr.00089-17.
3. Harbarth S, Holeckova K, Froidevaux C, et al. Diagnostic Value of Procalcitonin, Interleukin-6, and Interleukin-8 in Critically III Patients Admitted with Suspected Sepsis. American Journal of Respiratory and Critical Care Medicine. 2001;164(3):396-402. doi:10.1164/ajrccm.164.3.2009052.
4. Soni NJ, Samson DJ, Galaydick JL, et al. Procalcitonin-guided antibiotic therapy: A systematic review and meta-analysis. Journal of Hospital Medicine. 2013;8(9):530-540. doi:10.1002/jhm.2067.

Utilization and Costs in Critically III Patients in the United States. Chest. 2017;151(1):23-33. doi:10.1016/j. chest.2016.06.046.

6. Torio C, Moore B. National Inpatient Hospital Costs: The Most Expensive Conditions by Payer, 2013. *HCUP Statistical Brief 204*. May 2016. Agency for the Healthcare Research and Quality, Rockville, MD. http://www.hcup-us.ahrq.go/reports/statbriefs/sb204-Most-Expensive-Hospital-Conditions.pdf.
7. Rhee C, Dantes R, Epstein L, et al. Incidence and Trends of Sepsis in US Hospitals Using Clinical vs Claims Data, 2009-2014. *JAMA*. 2017;318(13):1241. doi:10.1001/jama.13836.