Sepsis is an extreme and abnormal response to an infection. Chemicals released into the blood to fight the infection trigger widespread inflammation that becomes uncontrolled. Without timely treatment, sepsis has devastating consequences including tissue damage, organ failure, long hospital stays, recurring complications, and a high death rate.

One in three patients who die in the hospital die of sepsis.

Sepsis Alliance (https://www.sepsis.org/sepsis-basics/what-is-sepsis/)


https://blogs.cdc.gov/safehealthcare/the-cost-of-sepsis/
https://www.summitmedicalgroup.com/library/adult_care/ac-sepsis_dx/
At MCIRCC, researchers, clinicians, engineers, data scientists, donors, and entrepreneurs are working together to develop dozens of cutting-edge life-saving treatments and therapies.

We are re-imagining sepsis care, from the basic science and definition of the disease to how we diagnose and treat every aspect of the patient and their family.

Sample MCIRCC innovations in the area of sepsis include:

**Smart Pipette**
A portable blood analysis system that is wirelessly connected to a smartphone. The data it gathers is analyzed and then correlated with sepsis severity, treatments, and outcomes to result in timely intervention and to predict sepsis development.

**Nanorod-PCR**
Assay using nanotechnology to detect bacteria in whole blood without traditional blood cultures. The ability to rapidly detect bacterial DNA signatures allows physicians to prescribe the “right drug for the right bug” for septic patients while reducing bacterial antibiotic resistance.

**VATMOS**
The constriction of arterial blood vessels is an important parameter in sepsis treatment. Using the smaller blood vessels in the finger, which respond much faster to signal from the brain, VATMOS detects and monitors potential constriction earlier than the traditional cuff system.

“My family went from making funeral plans to having hope. I’m thankful to still be here to watch my children grow.”
- Alicia B., Former U-M Patient & Survivor

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