

PRINT-Early detection, rapid treatment key to fighting sepsis

Sepsis remains one of the nation's most persistent health challenges, affecting an estimated 1.7 million Americans annually and contributing to hundreds of thousands of deaths each year. The [Centers for Disease Control and Prevention](#) says it's the third-leading cause of deaths in U.S. hospitals.

Most recently, sepsis was considered a contributing factor to the death of NASCAR legend Kyle Busch, who died at age 41. According to Leon Yeh, MD, an OSF HealthCare leader involved in sepsis prevention efforts, Busch had symptoms of sepsis, but hospital treatment was delayed too long.

Dr. Yeh stresses one of the most important lessons clinicians have learned is that treatment cannot wait for complete answers.

"I think it took some time for our people to understand that you didn't need to know exactly where the sepsis was coming from before you treated it," says Dr. Yeh. "The standard now is to administer broad-spectrum antibiotics. You cast a wide net for anything that could be causing this condition, and then you sort it out later."

Early intervention saves lives

Dr. Yeh explains that rapid intervention is critical because delays can have deadly consequences.

"The early literature on sepsis showed that with each hour of delay in antibiotics, there was a measurable increased mortality. That's why it's so important to get treatment early."

Sepsis is defined as a life-threatening organ dysfunction caused by the body's dysregulated response to an infection. While pneumonia and urinary tract infections account for most cases, virtually any infection can trigger the condition, including minor cuts and scrapes that are not cleaned well.

Hospitals have increasingly focused on identifying those most at risk and responding more quickly. Advanced surveillance tools monitor patient vital signs and laboratory results, generating alerts when warning signs appear. However, technology alone is not enough.

Success depends on helping nurses and physicians move quickly once an alert is triggered.

OSF has been on a journey to address the sepsis challenge. In 2018, OSF Advanced Analytics division developed a pioneering predictive model, which outperformed other models at the time, that helped establish a foundation for sepsis detection efforts across the organization. In 2024, OSF built on that work when leaders implemented Epic's Sepsis 2.0 model within the health system's electronic health record. The system leverages ongoing data updates and evaluates more than 80 clinical variables from millions of patients to generate risk estimates every 20 minutes, supporting timely clinical decision-making. Still, Dr. Yeh notes that no predictive model alone is 100% accurate at detecting sepsis.

Reducing hospital-acquired infections is key

Nearly 85% of people with sepsis arrive at the emergency department with the life-threatening condition. The rest develop sepsis while being treated in the hospital. OSF, along with other health

systems, is also working to reduce hospital-acquired infections that can lead to sepsis. Efforts have focused on minimizing the use of invasive devices whenever possible.

"We've made great strides in that over the past few years to help reduce hospital-acquired infections, either by central lines or urinary catheters, for instance," Dr. Yeh says. "There are many interventions that we've put in place, from education toward bundles and best practices, both for providers and nurses."

One particularly effective strategy, the physician noted, is avoiding unnecessary procedures altogether.

"I think one intervention that's really notable is that we recognize it's hard to get an infection from lines that you don't place. If we can prevent placing a central line and prevent placing Foley [urinary] catheters, then those are infections that we naturally won't get."

Dr. Yeh says OSF also has implemented safeguards within its order for Foley catheters that require valid justification and include an auto discontinue after 48 hours that can only be overridden with proper medical necessity documentation.

Something else to consider – people who are older with chronic conditions such as diabetes, or are immunocompromised, Dr. Yeh says, are more susceptible to infections and need to pay more attention when symptoms develop.

"If you get a cut or scrape, monitor those things. Certainly good local wound care and maybe an urgent care visit would be smart ... seeing your doctor. But, if things start to get out of control, meaning if you develop systemic symptoms where you feel ill or you're running a fever, that's not normal. That means there's spreading going on so that's when you really need to pay more attention," he recommends.

Post-sepsis syndrome can occur

For patients who survive sepsis, recovery can continue long after discharge. There is a condition known as post-sepsis syndrome, which can affect patients physically, mentally and psychologically.

"And it can be really hard to get back to where you were pre-illness," according to Dr. Yeh. "Things like chronic fatigue, muscle and joint pains, depression, anxiety, post-traumatic stress syndrome, as well as brain fog and trouble concentrating – those can all be symptoms that linger well after the hospitalization."

The length of time symptoms can persist depends on a patient's age, overall health before sepsis and severity of illness.

While some people experience prolonged recovery, Dr. Yeh emphasizes that most survivors eventually regain their previous level of function. In the future, Dr. Yeh sees a post-sepsis initiative at OSF, but for now the focus includes reducing hospital infections beyond current rates, which have been reduced in the past five years.

The overarching message for both clinicians and patients is to recognize symptoms early and act quickly. In the fight against sepsis, speed remains one of the most effective treatments available.