

**Kristin Jones**  
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## **Not thinking about sepsis? Neither is your doctor**



Six years after contracting sepsis, Pamela Popp is healthy enough to enjoy time with her llamas in this August 2014 photo. Medical staff treating Popp, an attorney in Evergreen, missed the diagnosis and she was hospitalized for a month. The medical costs bankrupted her, and she still suffers after-effects from the illness.(Michael Martin/Special to Rocky Mountain PBS I-News)

Define sepsis.

Drawing a blank? You're excused for your ignorance. Fewer than half of all Americans have ever heard of this medical condition, according to a survey conducted last year by the Sepsis Alliance, an advocacy group. But it contributes to as many as half of all hospital deaths in the U.S., many of them preventable, according to a recent study by Kaiser Permanente Northern California.

Part of the problem? Doctors aren't thinking about sepsis either.

Sepsis, which is sometimes called a blood infection, is the body's out-of-whack inflammatory response to an infection. Its symptoms can include a high fever or low temperature, elevated heart rate and difficulty breathing. Early recognition is key to treating it.

In Colorado alone, 12,000 people are expected to get sepsis this year, said Dr. Judy Zerzan, the state's chief medical officer, at an event held at the University of Colorado Hospital in Aurora on Monday to raise awareness of sepsis. Around 3,000 of those infected will die.

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Pamela Popp

Sepsis costs Colorado hospitals about \$545 million a year, according to the Sepsis Alliance.

Front Range hospitals report a mixed record of dealing with sepsis, according to an analysis of Medicare data compiled by HealthGrades and provided to Rocky Mountain PBS I-News by Medical Simulation Corporation, a company that helps health care facilities improve their performance.

Parker Adventist reported that 8.8 percent of its septic patients died, according to Medicare data from 2010 to 2012.

Platte Valley Medical Center in Thornton reported a 28 percent sepsis mortality rate in the same period.

Most hospitals hover around 21 percent, which is the average sepsis mortality rate in Colorado.

Sepsis experts say these numbers can be misleading, because sepsis so frequently goes undiagnosed and unreported.

"If you recognize it earlier, you have a higher survival rate, and you also have a larger sample size," says Tara Crockett, of Medical Simulation.

The very old and the very young are at the greatest risk, she says. People with other conditions like diabetes or cardiovascular disease, poor nutrition or some form of immune suppression are also at risk.

"Pretty much a vast majority of the people who come to the hospital will have some risk factor," says Crockett. Finding it requires "being a detective."

Sepsis Alliance is working to teach patients, doctors and nurses to “Suspect Sepsis.” With early recognition, sepsis can be treated with fluids and antibiotics.

Without early treatment, sepsis can progress quickly.

Pamela Popp is an Evergreen-based lawyer who works for a firm that helps doctors and health facilities mitigate their risk of malpractice by improving their standards.

That didn’t protect her from coming close to death by sepsis in 2008. After a hysterectomy in January of that year, she was discharged from Littleton Adventist Hospital expecting to be sore for a few days.

Instead, she became short of breath, and had a seizure at a restaurant close to her home. She became confused and muddled. Back at the hospital’s emergency room, medical staff didn’t recognize the signs of sepsis. Within hours, she had lost consciousness and was breathing with the help of a ventilator. One by one, her non-essential organs shut down.

Popp spent a month in the hospital, at a cost of \$500,000. For another six weeks, she had IV therapy on her own at home. And her battle wasn’t over; for the years since her bout with sepsis, she has struggled with drug-induced lupus, memory loss, nightmares and hallucinations. The medical bills bankrupted her.

And no one ever told her what exactly went wrong.

“My discharge summary had about 20 different diagnoses on it,” says Popp. “No one looked back and said, ‘oh, this is sepsis.’”

Still, she was one of the lucky ones.

It’s typical of sepsis to go undetected, says Dr. Halden Scott, who directs a program to increase recognition and treatment at Children’s Hospital Colorado.

That’s especially true among children, where sepsis is most often linked to a serious and chronic illness like cancer.

“Most emergency room doctors will see a case of pediatric sepsis once or twice in their careers,” says Scott, making diagnosing it all but impossible at community hospitals that don’t specialize in serious pediatric illnesses. Confounding matters is that the ordinary signs of sepsis — low or high temperature and elevated heart rate — aren’t always good indicators of the condition in children.

At Children’s Hospital, the sepsis mortality rate for children is now under 1 percent, says Scott, compared with a national rate for children of roughly 10 percent.

Scott says the hospital has trained its staff to ask each other, aloud, “Is it sepsis?” She is also working on developing a protocol that would allow doctors to identify the condition more easily, even if they haven’t seen it before.

For Popp, it took a trip to the Mayo Clinic in Rochester, Minnesota, armed with her medical records, to piece together a diagnosis.

“I wanted to know whether it would happen again,” says Popp. “I would not go through it again, and that’s what drove me to get answers.”

Popp gets emotional when she talks about sepsis, knowing the toll that the disease has taken in her own and others’ lives. Six years later, she has recovered enough to dedicate a large part of her work to raising awareness and improving treatment of the disease.

Speaking as a lawyer, she says, “It’s an academically beautiful topic to discuss.”

That’s because it’s a perfect illustration of what hospitals do poorly.

“You go into a hospital and every department is isolated,” says Popp. “To treat sepsis, you need everybody to work together.”

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