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UCHealth Brings Sepsis Fight to Med-Surg Floors

By Tyler Smith

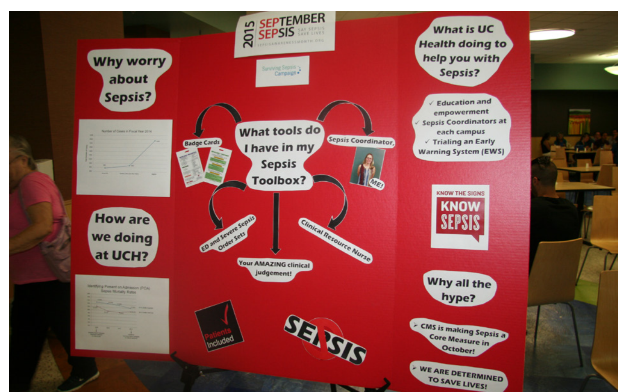
University of Colorado Health is bolstering its front-line defenses against the threat of sepsis, a condition that exacts a steep price from patients and health care organizations across the nation and the world. The key: installing a strong early warning system on each hospital's medical-surgical floors.

The pivot of the initiative is a sepsis coordinator at each UCHealth hospital. At University of Colorado Hospital (UCH), it's Nicole Huntley, RN, CNS, a critical care-trained nurse. She and her colleagues will work with med-surg staff nurses and educators to sharpen their awareness of the signs of sepsis, which is a systemic inflammatory response to infection, and encourage them to administer potentially lifesaving treatment promptly.

Nicole Huntley (left), with critical-care nurse specialist Shannon Johnson-Bortolotto, is the sepsis coordinator for UCH.

The effort has the backing of nursing, physician, and hospital leaders from throughout UCHealth, said Huntley, noting that efforts are underway to develop a system-level data dashboard to track care delivered to sepsis patients and their outcomes.

The new initiative comes at a time of continued scrutiny on sepsis, sometimes referred to as system inflammatory response syndrome, or SIRS. The Surviving Sepsis Campaign (SSC), which launched in 2002, helped to develop standards of care for treating the condition. As of Oct. 1 this year, the Centers for Medicare and Medicaid Services (CMS) will make sepsis standards of care a core measure for hospitals and another factor in the Medicare reimbursement they receive.



Information about sepsis was displayed on a large board in the Garden View Café at UCH Sept. 14.

Bundling up. Locally, UCHealth began an initiative during the summer of 2014 to reduce sepsis mortality rates. One key aim: adopt a "bundle" of evidence-based measures of care to treat patients with severe sepsis *(see box)*. Huntley's work will center on the med-surg units because the early signs of sepsis – including increased heart and respiratory rates, elevated temperature, and abnormal white blood cell counts – escape detection more frequently there than in intensive care units and the emergency department.

That's not a reflection on the quality of care on med-surg units, Huntley stressed. She noted that the signs of the condition can be "relatively subtle" and so can easily escape detection if staff are unfamiliar with them or have not received education.

"Patients are monitored more frequently in the critical-care areas and the ED," she said. "Looking for signs of sepsis is more

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ingrained." Indeed, UCH launched a concerted effort to decrease sepsis mortality late in 2010. That work, which focused on critical-care providers, has helped UCH keep its observed sepsis death rate below the expected rate. Now the goal is to make med-surg providers equally sensitized to sepsis, said Shannon Johnson-Bortolotto, RN, CCNS, APN, critical-care clinical nurse specialist with the Professional Resources Department at UCH.

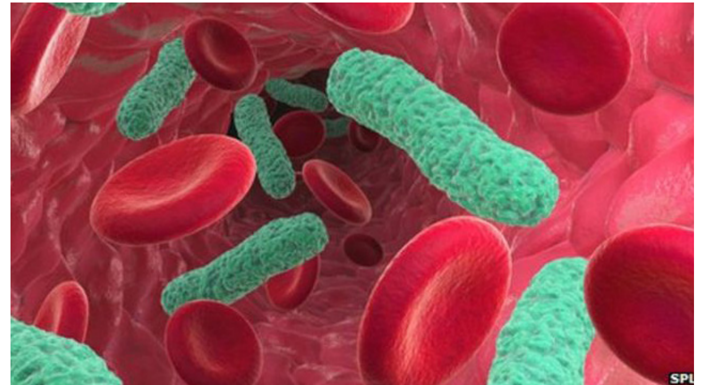
"We want to save med-surg patients from getting sicker and save them from having to go to the ICU," she said. "The more patients we can keep out of the ICU, the better."

An aggressive foe. The most important reason for quick recognition of sepsis is patient safety. The condition can lead to multiple organ failure without early intervention with broad-spectrum antibiotics and, in more severe cases, continuous fluid resuscitation. Beyond that, sepsis drains a hospital's human and financial resources. According to the National Institute of General Medical Sciences (NIGMS), it caused more than 1 million hospital admissions in 2011 and cost more than $20 billion. Sepsis is also the single most expensive condition billed to Medicare, the NIGMS reports, and second-most expensive billed to Medicaid and people without insurance.

"If we can catch the condition on the med-surg floors before it becomes severe, we can intervene there, saving lives, patient transfers, and money," Johnson-Bortolotto said. She added that in fiscal year 2014, the number of sepsis cases at UCH outnumbered the combined total of stroke and myocardial infarction cases by more than 700.

Huntley was on hand to provide information about sepsis Sept. 14.

The CMS core measures also demand timely intervention. In cases of severe sepsis, hospitals will have a three-hour window after diagnosis to determine lactate levels – high levels are a sign that the organs are not getting enough oxygen – send blood cultures, and start broad-spectrum antibiotics. For septic shock, the window after diagnosis is three hours to begin intravenous fluid resuscitation, and six hours to administer medications to raise blood pressure and to place a central line or use an alternative method to measure the volume of blood circulating through tissue.



The point of complying with the standards is not simply to check off a regulatory box, Huntley said. She noted that every hour of delay in administering sepsis treatment increases patient mortality. "CMS is driving us, but saving lives is the key," she said.

Floor fight. Huntley and her UCHealth sepsis coordinator colleagues will be major players in that effort. On a recent afternoon, Huntley was in the Garden View Café at UCH staffing an information booth in recognition of World Sepsis Day. Among the handouts were laminated cards packed with information about the criteria for early sepsis recognition and the protocols for treating it.

In addition, Huntley said she plans to spend time on med-surg units helping to monitor patients, consulting with nurses and physicians when they suspect sepsis, and reviewing sepsis cases to identify signs that might have been missed or overlooked.

Johnson-Bortolotto said the emphasis will be on vigilance, with elevated lactate levels being the basic rule-in or rule-out for sepsis.

"We need to be very suspicious," she said. "Our approach needs to be, 'Prove to me that the patient is not septic.' If it's some other problem, we can always move on to that."

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Bundled Care

Elements of evidence-based bundles of care to be completed within three hours for patients with severe sepsis:

- Measure lactate levels
- Obtain blood cultures prior to administration of antibiotics
- Administer broad-spectrum antibiotics
- Administer appropriate amounts of crystalloid for hypotension