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Hospital Clears Higher Bar for Stroke Treatment

By Tyler Smith

By now, the slogans are familiar. "Minutes matter" and "time is tissue" are reminders that every stroke victim faces a race against the clock. With prompt recognition of the symptoms, assessment, and treatment, providers have a good chance of busting a clot choking blood flow to the brain. By the same token, the longer treatment is delayed, the greater the patient's risk of permanent disability or death.

Stroke Program Clinical Director Angela Williams says hospital providers continue to search for ways to trim stroke response time.

The numbers don't lie. A 2014 study published in the *Journal of the American Medical Association* concluded that acute ischemic stroke patients who received infused tissue plasminogen activator (tPA) within 60 minutes of arriving at the hospital had lower rates of in-hospital mortality and long-term disability than those who did not. However, the study also noted that less than one-third of eligible patients received tPA within the critical time frame.

The "Target: Stroke" initiative launched by the American Stroke Association (ASA) helped to improve that number to 50 percent. Target: Stroke Phase II upped the goal to 75 percent. The Stroke Program at University of Colorado Hospital met the challenge – and then some.

The program learned this month that it earned ASA's highest honor, "Target: Stroke Elite Plus" for 2014. More than a glittering label, the designation is based on meeting standards the evidence shows saves lives. It required the hospital to deliver tPA to at least 75 percent of ischemic stroke patients in 60 minutes or less and to at least 50 percent of patients within 45 minutes.

Angela Williams, RN, MS, clinical director for the Stroke Program, attributes the hospital's success to ongoing collaboration between Emergency Department, Neurology, and Radiology providers and staff, and many other team members called to respond to Stroke Alerts.

"There are lots of spokes to the wheel," Williams said. "We continue to change our processes in the ED to make sure we provide fast and effective care to eligible patients when they arrive."

Beat the clock. The time challenge begins when a suspected ischemic stroke patient comes through the door of the ED. The patient is rushed to a resuscitation room where providers perform an assessment and decide whether or not to activate a Stroke Alert. If they do, a flurry of activity ensues, including wheeling the patient to the CT suite in the ED for an image to confirm that it's safe to administer intravenous tPA.

The chances of success largely hinge on people knowing their roles and understanding the importance of performing them promptly. With support from ED and other department leaders, the Stroke Program developed a host of tools, among them pocket cards that explain the Stroke Alert process, informational wall clings, education for emergency medical service (EMS) providers, and stroke education for care team assistants, CT techs, and neurology residents.

The hospital has worked hard to develop "tight linkages" with EMS providers Denver Health and the Aurora Fire Department, said

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Department of Emergency Medicine physician Chris McStay, MD, who serves as the ED leadership team's liaison to the Stroke Council and is chief of clinical operations for the ED. An early call to the ED from EMS providers in the field who suspect they are transporting a stroke victim allows providers to get ready for the patient's arrival, saving precious time, McStay said.

"We've provided broad education to these providers to encourage them to be somewhat liberal in activating the Stroke Team," McStay said. "We wanted to make sure that they understand that early activation is imperative to getting patients to the CT scan."

As further evidence of the important role they play in responding to strokes, EMS providers were on hand for a December "rapid process module" event in the ED aimed at finding ways to shave minutes from the process of getting patients from the door to the tPA infusion needle, McStay said. The participants included Kevin Waters, EMS bureau manager for Aurora Fire.

"We showed them our data on stroke and gave feedback to the EMS providers to help them understand the opportunities we have for reducing our response time," McStay said. Further reinforcement comes from the hospital's Fred Severyn, MD, who serves as medical director for Aurora Fire.

Time to table. Williams said event participants concluded that bringing patients directly to the CT room for their assessments instead of stopping in the resuscitation room could save time safely. That change should happen in March, she said, allowing time to get EMS and all ED staff on board with the change.

"They agree it's the right thing to do," Williams said.

Another potential time-saver is to have the ED provider team take a history and physical from a conscious patient on the way to the CT room for a huddle and assessment, Williams said. The improvement event also pointed up the need to "solidify" debriefings among all providers involved in a patient's care and ensure that they occur immediately after a Stroke Alert, she added.

"Better communication between providers enhances efficiency and can help us to further reduce our times," Williams said.

The concentrated effort on reducing the time to treatment will serve the hospital well as it prepares for a Joint Commission survey for recertification as a Comprehensive Stroke Center sometime within the next couple of months, Williams added. "Overall, we have a fantastic team of dedicated providers and staff focused on quality stroke care," she said. "Our challenge is to find ways to provide evidence-based care in a safe and efficient manner. We're trying to bring the time to treatment down because every little minute for stroke patients can make a big difference in their lives."