

## ED Ready When Minutes Matter

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### Other Headlines

Having a step-by-step guide in the form of a protocol can be invaluable in emergency situations. That's exactly what happened recently in the Burnet Emergency Department, when a 15-year-old patient recently arrived showing signs of a possible stroke.

That morning, while in the shower, the patient had partially lost her vision and developed a headache. When she arrived in the ED, her eyesight was worse and one side of her face was drooping.

**Ray Price**, RN, registered nurse II, was caring for this patient and says that the doctor on the case, **Berkeley Bennett**, MD, immediately pulled out the ED's stroke protocol. Cincinnati Children's emergency departments rarely see stroke cases, so there's a stroke protocol in place to guide clinicians.

"This patient was born with complex vascular malformations, so that put her at a higher risk for a stroke," Price says.

The team's first challenge was to obtain IV access in order to administer Alteplase, a drug that helps to break up the clot that forms during a stroke. Gaining access proved difficult given the patient's vascular malformations.

"After the team tried to establish an IV using ultrasound, Ray was able to do it without any additional equipment," Bennett says.

Both team members say having the stroke protocol on board saves time, which is crucial as stroke patients may arrive in the ED several hours after a stroke has occurred. "When a patient suffers a stroke, you only have about a four-hour window to administer



While a high school senior, Adam Zust survived a stroke. He is among the few stroke cases that Cincinnati Children's Emergency Department has seen.

treatment,” Bennett says.

All services involved in caring for stroke patients – including Neurology and Neuroradiology – are aware of the protocol.

“Having a stroke protocol definitely streamlined the process and helped the team focus on our priorities,” Price says. “We went to CT scan to get our pictures and continued to work on an IV until we had the decision to administer medication.”

### **Developing Stroke Protocol a Multidisciplinary Effort**

Last year, Cincinnati Children’s Medical Resuscitation Committee – a multidisciplinary team from the ED which includes physicians, nurses, an environmental coordinator and ad hoc members from respiratory therapy and pharmacy – worked to develop a stroke protocol with clinicians from Neurology, Neuroradiology, Hematology and the UC stroke team. (In this case, medical resuscitation means using a critical therapy or intervention to help keep a patient safe.)

This team studied stroke cases, simulated a stroke case in the ED and identified which parts of the process were difficult to navigate. They also addressed the basics, such as whether or not all ED staff members knew how to get in touch with the UC stroke team.

“The stroke protocol really helps us facilitate communication between multiple care teams,” says **Andrea Rinderknecht, MD**. “So every time we call partner departments, such as Neuroradiology, we’re saying the same things and providing standardized care.”

Multidisciplinary collaboration on protocols ensures that all the specialists involved in care help shape a treatment plan that everyone buys into. The ED has a number of protocols which may be viewed on the [Medical Resuscitation Committee’s website](#).

“The algorithm for stroke cases is based on best evidence, expert opinion and feedback from team members who have cared for stroke patients,” Rinderknecht says. “We wanted to make the

process easier, more efficient and more likely to adhere to the standard practices for stroke treatment.”

### **Protocols Help the Patient and Care Team**

For other units that would like to develop protocols, Rinderknecht recommends studying what you do very closely to identify and correct weaknesses and inefficiencies. If an event happens frequently, that’s a place to focus efforts to develop a protocol.

“Or as is the case with stroke, if an event is infrequent but the consequences are serious, that’s another place to prioritize,” Rinderknecht says. “With stroke, if you miss it or treat it improperly, that’s a missed opportunity to change someone’s life.”

One ongoing challenge is making sure everyone remembers to use an algorithm. When teams use algorithms, they often report back on how helpful these algorithms were for rarely seen cases.

“As a complex system, we don’t know when we’ll see unusual situations such as a stroke case in the ED, but we do know eventually we’ll see it,” says **Steve Muething**, MD, vice president, Safety. “The right thing to do is to prepare well in advance and keep the protocol in everyone’s minds so we’re ready when it happens.”