



International Academies  
of Emergency Dispatch.

# EMERGENCY DISPATCH RESEARCH AT WORK



**“WHEN EMDs  
USE THE  
TOOL, THEY  
IDENTIFY  
MORE THAN  
TWICE  
AS MANY  
STROKES AS  
MEDICS ON  
SCENE.”**



## DOES USING THE STROKE DIAGNOSTIC TOOL MATTER?

**Yes! It saves time and brain.**

**Strokes:** Strokes interrupt blood supply to part of the brain through blockage or bleeding. The length of time a stroke interrupts the supply determines the amount of brain damage caused. Quickly restoring normal blood flow to the brain is critical, requiring smart identification and timely response.

**Smart Identification:** Emergency Medical Dispatchers (EMDs) provide smart identification by knowing and recognizing stroke symptoms as callers describe them. This can be challenging when stroke symptoms change or mimic other conditions. EMDs strengthen stroke identification when they use the Stroke Diagnostic Tool. Based on the widely used Cincinnati Prehospital Stroke Scale (CPSS), the Stroke Diagnostic Tool prompts EMDs to ask three questions and provides them with results they may use to alert Emergency Medical Services (EMS) responders and receiving hospitals.

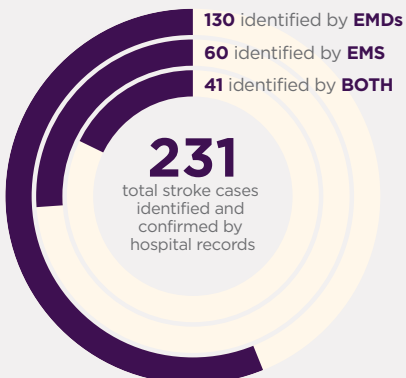
When EMDs use the Tool, they identify more than twice as many strokes as medics on scene, providing the earliest and most accurate identification for EMS responders and hospitals. Using the Stroke Diagnostic Tool has been shown to take only about 27 seconds.

**Timely Response:** A timely response provides timely treatment. When EMS responders receive accurate stroke alerts at an appropriate response level, they can provide the best response—they arrive on scene without lights and sirens, perform additional assessments, and transport patients to hospitals readied with equipment and personnel.

Stroke patients need access to equipment and doctors as soon as possible for treatment. The best treatment for strokes caused by blockage is tissue plasminogen activator (tPA). It breaks up clots and is very effective at restoring normal blood flow to the brain. tPA must be administered within a few hours of when stroke symptoms begin. Currently only doctors may administer tPA after a CT scan confirms that a blockage, not bleeding, has caused the stroke. EMDs using the Stroke Diagnostic Tool give patients the best chance at getting what they need the fastest way.

**Symptoms May Change:** The Stroke Diagnostic Tool's result provides the starting point that EMS responders and hospitals use to track the progression of the stroke over time.

Number of Stroke Cases  
Identified by EMD and EMS



Stroke symptoms can change quickly over time and can even completely disappear. They can also indicate other medical conditions. This makes it difficult to identify a stroke at any given point. Typically, callers contact 911 because the patient is having trouble now and needs help. This places EMDs at the perfect moment to recognize the symptoms and identify tens of thousands of strokes per year that no one else can.

Once EMS responders arrive on scene, they may perform a stroke assessment. However, when they do, the symptoms may have changed or disappeared, so EMDs' use of the Stroke Diagnostic Tool may be the only opportunity to record symptoms while they are occurring. The EMS responder's assessment is helpful to track how the stroke is progressing because it is a second measure of the stroke over time. If they are not able to complete the assessment or the symptoms have vanished, then the Stroke Diagnostic Tool's result is the only information the doctors have to track the patient's stroke over time. Knowing how much time has passed and what symptoms the patient previously experienced helps the doctor diagnose and order treatment.

**Take Time to Act:** Since only about 3% of emergency calls are stroke calls, there are not many on-the-job opportunities to use the Stroke Protocol and the Stroke Diagnostic Tool. When a stroke call does come, positive patient outcomes rely on an EMD's ability to provide smart identification.

Smart identification does not happen by accident; it results from EMDs quickly recognizing stroke symptoms, taking time to use the Stroke Diagnostic Tool, and dispatching stroke alerts at the appropriate response level. 🌟

#### FOR MORE INFORMATION:

- Olola C et al. "Characterization of Hospital-Confirmed Stroke Evidence for Callers Who Were Unable to Complete Stroke Test Requests from the Emergency Medical Dispatcher." *AEDR*, 2016.
- Clawson J et al. "Predictive Ability of an Emergency Medical Dispatch Stroke Diagnostic Tool in Identifying Hospital-Confirmed Strokes." *J Stroke and Cerebrovascular Diseases*, 2016.
- Gardett I et al. "Comparison of Emergency Medical Dispatcher Stroke Identification and Paramedic On-Scene Stroke Assessment." *AEDR*, 2016.



Chuck Gipson

## STROKE DIAGNOSTIC TOOL IN ACTION

In 2014, MEDIC EMS (Davenport, Iowa, USA) adopted a new policy for 911 stroke calls. The policy directs Emergency Medical Dispatchers (EMDs) to alert a local stroke center when they identify Clear Evidence of stroke using the Stroke Diagnostic Tool. The goal is to reduce the time patients have to wait for diagnosis and treatment because time is brain—the sooner a diagnosis is given, the sooner treatment can begin, and the greater the chance for survival without brain damage.

After policy implementation, 2015 was the first full year of data collection. MEDIC EMS found that 73% of patients arrived at a stroke center and received tissue plasminogen activator (tPA) within an hour of calling 911. This was already higher than the United States average of 26.6%. This increased to 82% in 2016 and 83% in January 2017.

EMDs are central to this success. Their alert, based on the Stroke Diagnostic Tool, saves valuable time—getting patients treatment more quickly.

Chuck Gipson built this time- and brain-saving program. In 2014, he drafted an integrated stroke response plan. He met with local stroke hospital systems and convinced all of them to receive arrival alerts for stroke patients from EMDs. Then he approached his medical director and secured permission to implement the plan.

With an official policy in place and unanimous local healthcare system support, Gipson began building. He trained EMDs to ask Key Questions, use the Stroke Diagnostic Tool, ask callers to select a stroke center, call the center, and provide the Stroke Diagnostic Tool's results to the charge nurse. He trained paramedics to perform on-scene assessments and confirm or cancel the EMD alert to the center. He tirelessly implemented, supported, and ran quality reviews on the new program. He continues to lead this outstanding effort. His success has brought it to the attention of many community leaders, and there are now plans to add resources and support. 🌟