

## Why Not Call 911?

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See related article, pages ●●●–●●●.

According to the World Health Organization (WHO), approximately 15 million people experience a stroke each year, of which one third die and one third are permanently disabled. It was not until the mid-nineties that the advent of tissue plasminogen activator (tPA) offered a treatment option.

One of the most important factors limiting the use of tPA is the 3-hour window of administration (up to 4.5 hours in select cases) recommended to prevent hemorrhagic complications. Because of the importance of seeking immediate medical care for tPA to be a treatment option, public health campaigns, such as the “Know Stroke” campaign launched by the US National Institute of Neurological Diseases and Stroke (NINDS) in 2001, focus primarily on 2 major points: increasing the public’s awareness of signs and symptoms of stroke and encouraging the public to call 911 in case of stroke.

In this issue of *Stroke*, the study by Fussman et al<sup>1</sup> provides some evidence on the successes and shortcomings of such public health efforts in the United States. Participants were recruited through a random-digit-dial telephone survey which likely provides a fairly accurate snapshot of the action patterns in their local community. This study confirms that public recognition of stroke signs and symptoms has improved in recent years. Improved recognition of stroke as an

emergency resulted in 72% to 87% of patients being taken to the hospital, but this was most commonly done without calling 911. In spite of the efforts to educate on the need to call 911, this study suggests that the public is not aware of the advantages of transport to the hospital by ambulance.

This study’s most important accomplishment, beyond the data presented, is raising questions that should inform and guide the next steps in research and public education. Formal evaluation of the factors that influence the decision to use private transportation versus calling 911 for ambulance transportation to the hospital is necessary. Multiple factors are likely to affect this decision and these are likely to vary by region. Barriers to Emergency Medical Services (EMS) access and financial concerns, among others, can have a significant impact on community action patterns and should be the focus of further investigation. If modifying these patterns proves unsuccessful, it would be necessary to determine whether, with appropriate education, patients can arrive to the emergency room (ER) in a timely manner and whether ER triage protocols can expedite evaluation of stroke patients not arriving by ambulance.

As the authors clearly state, critical for changing these community patterns is linking rapid response to improved health outcomes. Public health programs emphasizing improved outcomes are likely to have a greater impact.

In the fight against time to save brain and to reduce mortality and disability after stroke, it is important to eliminate all the system and community barriers. Getting people to the ER on time is where it all starts.

### Reference

1. Fussman C, Rafferty AP, Lyon-Callo S, Morgenstern LB, Reeves MJ. Lack of association between stroke symptom knowledge and intent to call 911: a population-based survey. *Stroke*. 2010;41:XXX-XXX.

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