

Emergency Medical Services Capacity for Prehospital Stroke Care

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Christopher Maylahn] Emergency medical services, or EMS, can positively impact the care that stroke patients receive. These services result in early identification and quick transport, which lead to more timely delivery of treatments. I'm Christopher Maylahn, a member of the editorial board for CDC's journal *Preventing Chronic Disease*. Joining me today is Mehul Patel, winner of the journal's 2013 Student Research Contest. Mehul is a doctoral candidate in the Department of Epidemiology at the University of North Carolina at Chapel Hill, and he's here today to discuss his study on prehospital emergency medical services for stroke care. Thank you for joining us, Mehul.

[Mehul Patel] It's my pleasure. Thanks for having me.

[Christopher Maylahn] Mehul, please give our listeners some background on your study.

[Mehul Patel] Sure. Stroke is a major cause of death and disability in the U.S. It's an acute, or a sudden, disease of the brain in which a clot or a ruptured vessel prevents sufficient blood flow to brain tissue, often resulting in permanent brain damage. So, as you can imagine, stroke is a very serious condition and requires immediate medical attention. Emergency medical services, or EMS, can screen or test for stroke in the field, collect important clinical data on the patient, and then transport directly to a hospital that specializes in stroke care, in effect speeding up the time of treatment, and time is extremely important for a stroke patient. EMS personnel, though, are not all equally qualified or prepared to respond to and manage stroke patients. So, in this study we surveyed EMS systems in North Carolina on their stroke education, use of stroke screening tools, and other aspects of prehospital stroke care. We also then compared these levels to those observed by a previous survey back in 2001.

[Christopher Maylahn] In 2010, North Carolina passed rules and regulations that require EMS to use a standardized protocol. Tell us, briefly, what the rules and regulations require and if they have had a positive effect on stroke care.

[Mehul Patel] Well, a series of legislation has been passed in North Carolina over the past decade, and this legislation addresses stroke resources in North Carolina hospitals and EMS systems. And several EMS regulations have resulted from the state legislation. Most recently, a 2010 state-wide regulation required all EMS systems to implement a standardized set of patient care protocols. So these are written documents that guide the care of various patient conditions, of which stroke is one example. The goal here being to ensure prehospital care is up-to-date with the latest evidence and consistent across the state. In our study, we found a major improvement in the use of stroke screening tools among North Carolina EMS systems. Where in 2001 only 23 percent used the stroke screen, is 96 percent, so almost all EMS systems. And we feel the state-wide standardization of the stroke protocol likely played a key role in this improvement.

[Christopher Maylahn] Are there any additional areas of the EMS program that you found need attention?

[Mehul Patel] Certainly. In North Carolina, first, almost all EMS systems provided some stroke education to their personnel, but we found room for improvement in the content of education and how frequently it's offered. Secondly, all EMS systems in North Carolina are required to have a destination plan for transporting stroke patients; however, we found less than half always used that destination plan.

[Christopher Maylahn] How do you think the rules and regulations surrounding North Carolina's EMS program can serve as an example to other states?

[Mehul Patel] That's a great question. Every state organizes and delivers EMS a little differently, depending on its resources and needs. Our study provided convincing evidence of the improvements that can occur with state-wide EMS policies, so other states, especially those with a high burden of stroke, like North Carolina, may want to implement such policy changes.

[Christopher Maylahn] What do you hope will come of this research?

[Mehul Patel] First, I hope this research highlights the importance of continuously monitoring the capacity of EMS to provide optimal patient care for stroke and other medical emergencies. We've identified some specific areas of EMS stroke care that can be improved upon in North Carolina, and we would also like to see other regions and states perform similar assessments and identify their room for improvement. Lastly, I hope this work emphasizes the importance of EMS in caring for stroke and why it's important for people to know the facts about stroke, its warning signs, and to immediately call 911 if you think someone is having a stroke. EMS personnel are highly trained medical professionals, and EMS systems have policies and plans in place to help your recovery from stroke, which is a message stressed, not only in North Carolina, but nationally by the CDC and other organizations.

[Christopher Maylahn] Thank you for joining us today, Mehul. You can read his paper online at [cdc.gov/pccd](https://www.cdc.gov/pccd).

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