

# Emergency transport times for stroke patients still in need of improvement

July 27 2015

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Despite efforts to close the time gap between symptom onset and stroke treatment - including improvements in public education, 911 dispatch operations, pre-hospital detection and triage, hospital stroke system development, and stroke unit management - a new study presented today at the Society of NeuroInterventional Surgery (SNIS) 12th Annual Meeting suggests that delays in emergency transport are still prevalent and that improvements are needed to ensure patients can be treated within the optimal time window.

Perhaps more than any other condition, stroke requires timely diagnosis and treatment to yield the best possible outcomes for [patients](#). Three recent stroke studies - MR CLEAN, ESCAPE and EXTEND IA - demonstrated that the success of endovascular therapy was due in part to reducing the time it took for patients to access treatment. Evaluation of Transfer Times for Emergent Stroke Patients from Regional Centers to a Comprehensive Stroke Center, conducted at Vanderbilt University Medical Center in Nashville, Tennessee, specifically focuses on time intervals associated with hospital-to-hospital transfer as most patients in the United States (U.S.) are transported to a regional center that is not equipped to treat all levels of stroke. Recording 70 patient transfer times within a one-year timeframe, the study found that all transfer times were significantly longer than expected driving times, with average differences per hospital ranging from 46 to 133 minutes.

"Stroke requires a multi-disciplinary team that engages in a nuanced chain of events leading to treatment, and efficient and prompt patient

transport via Emergency Medical Services (EMS) is a significant link in the process," said Dr. Michael Froehler, lead study author and neurointerventionalist at the Cerebrovascular Program at Vanderbilt University Medical Center. "Within the broader stroke community, we've definitely made progress in our systems of care that ensure an increasing number of patients receive treatment as quickly as possible. But we need to do more."

The conversation on time to treatment is not without precedent. Within the last decade, the American Heart Association/American Stroke Association has put forth guidelines designed to advocate that stroke patients receive the highest level of care in the shortest time possible. Many state legislatures have created [stroke prevention](#) task forces and developed state-wide stroke prevention plans. Individual counties and cities have established systems to ensure that emergency medical service personnel are equipped to appropriately assess patients and immediately transfer them to the closest certified stroke center. Despite these efforts, transfer times often remain beyond the preferred treatment time window.

"The challenge to improve upon stroke systems of care is an opportunity to transform the way we approach stroke treatment, and we're seeing the most progress in the cities, states and regions that are engaging in collective efforts to ensure that patients go to the hospital that is best equipped to treat stroke," said Dr. Donald Frei, president of SNIS. "We have a unique responsibility to continue to invest our time, resources and best thinking to better assist our patients and to continually refine systems of care that will facilitate optimal [stroke treatment](#)."

Dr. Froehler pointed out that most changes in systems of care, while well-intentioned, are often not informed by evidence from trials. He has therefore initiated controlled study of stroke care systems at Vanderbilt University Medical Center by comparing different approaches to

transporting [stroke patients](#) to the right hospital faster. "It's important that we continue to inform best practices and evolve our systems for the good of patients who depend on rapid response and timely intervention. We must rigorously apply the same evidence-based standards that we use for individual patient treatment decisions to the broader systems of care in order to achieve necessary efficiencies that can make a real difference for our patients," said Froehler.

Stroke is the leading cause of disability and the fourth cause of death in the U.S. In 2010, [stroke](#) cost the U.S. an estimated \$54 billion, including the cost of health care services, medications and missed days of work. Additionally, strokes account for \$74 billion in health care expenditures annually for [treatment](#) due to disability.

Provided by Society of NeuroInterventional Surgery

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