FACTS

**Telestroke: Connecting Patients to Quality Treatment**

**OVERVIEW**

Stroke is the nation’s No. 4 killer and a leading cause of serious long-term disability, with nearly 800,000 strokes and 130,000 deaths occurring per year. About 66 percent of the total hospitalizations for stroke occur among adults age 65 and older, and approximately 94 percent of strokes occur in an urban or suburban area. The costs of treating stroke in the U.S. for 2012 were $71.5 billion and are expected to triple to $184 billion by 2030.

As these statistics demonstrate, the social and economic impact of stroke is devastating. Significant barriers prevent or slow treatment for a large number of patients with stroke, including: long travel times to stroke center hospitals, patients not arriving at the hospital within the treatment window, and the lack of availability of stroke specialists who can evaluate the patient and determine if he or she is a candidate for treatment.

The good news is that timely access to the latest therapies through expanded use of telestroke can greatly improve the quality of care and reduce disability from stroke. Telestroke provides an urgent and compelling alternative to having a stroke neurologist present at the bedside for treatment of acute strokes.

**TELESTROKE DEFINED**

Telestroke is the use of interactive videoconferencing in the delivery of acute stroke care. Specialists are provided with timely data to assist clinicians at the bedside in stroke-related decision making for patients presenting at distant facilities that do not have a stroke neurologist available around the clock.

**TELESTROKE AND tPA**

Tissue Plasminogen Activator (tPA) is a clot-busting drug that helps reverse disability from the most common type of stroke if given within the first 3 to 4-1/2 hours of symptom onset. The faster a patient receives treatment for stroke, the better the chances for recovery with minimal or no disability. Patients who receive tPA within 90 minutes of symptom onset are almost three times more likely to have favorable outcomes three months after a stroke than those who do not receive tPA.

However, about one-third of Americans live more than an hour from a primary stroke center, and only about 27 percent of stroke patients arrive at the hospital within 3.5 hours of symptom onset. Additionally, there are currently only 4 neurologists per 100,000 persons in the US, meaning that even emergency departments in urban and suburban areas are not able to have stroke neurologists readily available. As a result of these barriers, only 3 to 6 percent of patients receive tPA. Telestroke can help fill the void.

**TELESTROKE: CONNECTING THE EVIDENCE**

Telestroke programs are supported by evidence-based research. According to research, telestroke networks lead to the following benefits:

- Telemedicine has proven to be very effective in the evaluation and treatment of acute stroke, including significantly increasing the use of tPA, in rural and neurologically-underserved areas.
- Telestroke has also proven effective in increasing the use of tPA in urban areas. One recent study of 4 urban hospitals in Illinois found that their utilization of tPA increased by two to six times after telestroke was implemented.
- Compared to no telestroke network, a telestroke system can result in more use of tPA and stroke therapies, more patients discharged home independently, and overall cost-savings for the network of hospitals.
- A collaborative network for acute stroke care using ongoing data collection and review can lead to significant improvements in care and increase compliance with performance metrics.
- Both neurologists and emergency physicians agree that telestroke can reduce the geographic disparity in stroke treatment.
- Telestroke networks can contribute to advancing science by improving recruitment into stroke clinical trials.

**TELESTROKE SAVES MONEY**

Finally, telestroke can save Medicare and Medicaid money by reducing stroke-related disability and the need for costly inpatient rehabilitation and nursing home care. Stroke is currently the leading cause of Medicare admissions to inpatient rehabilitation facilities (IRFs), accounting for nearly 20 percent of all such admissions. According to one study,
patients receiving tPA were more likely to be discharged to home than to inpatient rehabilitation or nursing homes and the study projected savings in rehabilitation and nursing home costs of $10.2 million (in 2013 dollars) per 1,000 additional patients treated with tPA.\(^6\) A more recent analysis evaluating the cost utility of telestroke networks determined that the use of telestroke would save $2,227 per patient in nursing home costs alone, after accounting for the increased costs of setting up and maintaining the network and providing tPA.\(^7\)

![Image of a pie chart showing the distribution of Medicare Fee-For-Service cases in 2013.](Image)


### THE AHA/ASA ADVOCATES

The American Stroke Association, a division of the American Heart Association, urges policymakers to support the following policy recommendations for telestroke:

- Eliminate reimbursement barriers to telestroke, particularly Medicare’s rural originating site requirement.
- A mechanism for streamlining licensure for physicians providing telestroke consultations across state lines should be adopted by state medical boards.

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3. Based on 2013 CDC survey data which reported the prevalence of stroke was 2.4% for adults living within a MSA and 3.2% for adults living outside a MSA. Using US Census Bureau estimates of the population living in MSAs and non-MSAs, we estimated the total number of strokes occurring in MSAs and non-MSAs.