

## **2007 American Stroke Association Implementation Strategies for Emergency Medical Services Within Stroke Systems of Care**

**Edward C. Jauch, MD, FACEP**

**Assistant Professor, Director of Research, Department of Emergency Medicine, University of Cincinnati College of Medicine**

**Member, Writing Committee, 2007 Guidelines for the Early Management of Adults with Ischemic Stroke**

This summary accompanies the audio files on the ACEP Web site. It highlights elements of the new Implementation Strategies for Emergency Medical Services Within Stroke Systems of Care that have particular relevance to the emergency medicine community.[1] These guidelines are new and represent an expansion of guidelines based on the framework paper “Recommendations for the Establishment of Stroke Systems of Care: Recommendations from the American Stroke Association’s Task Force on the Development of Stroke Systems” published in 2005.[2]

As noted in the guideline’s introduction, “Advances over the past decade in acute stroke care, including the introduction of fibrinolytic and other short-term therapies, have highlighted the critical roles of emergency medical services (EMS) agencies and emergency medical services systems (EMSS) in optimizing stroke care.” This paper takes a 50,000 foot view of EMS and EMSS within stroke systems of care.

### **911 and Public Education into Role of 911 / EMS in Stroke**

Remarkably, just over 50% of all acute stroke patients arrive at the hospital via EMS; the need for public education is obvious. The guidelines recommend 100% coverage for enhanced 911 and W-E911 in all geographic areas covered by stroke systems of care. 911 dispatchers should also be educated in stroke signs and symptoms and stroke dispatch should be prioritized at the highest level of care available. This issue transcends stroke and should be a focus of state emergency medicine chapters.

### **EMS Education and Field Management**

The value of prehospital stroke screens has been shown in several previous studies. 100% of EMSS should use a validated prehospital stroke screening tool to identify stroke patients. Ideally, EMSS should over triage by 30%, similar to trauma, to ensure capturing most if not all significant strokes. EMS should provide prehospital notification of all potential stroke patients. Dispatch times, priorities, and transport times should be equivalent to trauma and acute myocardial infarction. The guidelines contain numerous suggestions for continuous improvement process and system feedback. Feedback to EMS and EMSS regarding triage accuracy, outcomes, etc is essential in improving the system and maintaining engagement of EMS and EMSS in stroke care.

### **EMS Triage**

Similar to other recent ASA guidelines, stroke center identification is encouraged: “Establish a hospital identification system that provides a transparent list of hospitals that meet standard criteria for primary stroke centers within the stroke system of care. Such a list should be readily available to EMS providers and the public.”

The development of triage protocols should occur, “... with state EMS medical director associations, the state chapter of the American College of Emergency Physicians, and the ASA to come to a consensus on common stroke training, triage, and transport protocols.”

Air medical transport protocol should be considered within the EMSS for regions of the country where distance precludes timely transport to appropriate stroke facilities.

The guidelines also recommend establishing protocols for the transfer of stroke patients from non-stroke center hospitals to stroke centers. If hospitals pursue stroke center designation, the emergency department is a key stakeholder in the development of regional EMSS and stroke center development, and additional resources need to be committed before the hospital begins to receive increased numbers of stroke patients.

### **Education and CQI**

Throughout the guidelines, EMS education, CQI, and EMSS review are emphasized. Individual EMS training on stroke and local protocols need to be continuous and the entire EMSS should be reviewed to ensure optimal performance and coverage. Given the potentially contentious issues, such as stroke triage, all regional stakeholders should be invited to participate in the creation of regional systems and triage protocols.

### **Summary**

“As improvements in the treatment of stroke emerge, EMSS within stroke systems of care will face new challenges. The adoption of new treatment modalities and emerging therapies for stroke in the prehospital setting will provide new opportunities for improving stroke care. The recommendations in this article are intended to provide assistance in implementing the EMS component of stroke systems within this evolving environment.”

### **References:**

1. Acker, J.E., 3rd, et al., *Implementation Strategies for Emergency Medical Services Within Stroke Systems of Care. A Policy Statement From the American Heart Association/ American Stroke Association Expert Panel on Emergency Medical Services Systems and the Stroke Council*. Stroke, 2007.
2. Schwamm, L.H., et al., *Recommendations for the establishment of stroke systems of care: recommendations from the American Stroke Association's Task Force on the Development of Stroke Systems*. Circulation, 2005. **111**(8): p. 1078-91.