General Assembly Report
from the State Legislated Stroke Task Force

INTRODUCTION

Stroke is the leading cause of disability and #3 cause of death in the United States (US). This year in Rhode Island (RI), more than 3,000 people will fall victim to a potentially treatable stroke and more than 600 Rhode Islanders will die from related stroke-related complications. This tragic loss of life and viability creates an annual financial burden for our state of over $312 million in medical costs, supportive care, and lost productivity.

Recognizing the grave importance of stroke care for Rhode Island's citizens, the General Assembly enacted *An Act Relating to Health and Safety – Stroke Task Force* (Chapter 544 2004-§2905 Substitute A) on July 9, 2004. This legislation, included as Appendix A, charged the Stroke Task Force with ensuring that "state-of-the-art information on stroke education, prevention and treatment is available to healthcare providers and patients." The General Assembly defined fourteen points of inquiry for Task Force review and requested an interim report followed by final recommendations.

As called for by the General Assembly, Rhode Island's Stroke Task Force represents a cross-section of medical, EMS, and lay members involved in stroke care. The Task Force chairman selected these members, listed in Appendix B, with input from RI Department of Health (RIDOH) and American Heart Association (AHA) leadership.

The Task Force has examined present stroke care practices in Rhode Island in the context of contemporary national recommendations from leading medical organizations and societies. Additionally, RI Task Force representatives have also participated in the Northeast Cerebrovascular Consortium (NECC), an ongoing collaboration of stroke care specialists sharing practice experiences with the goal of improving stroke care throughout the Northeast region.

STROKE MANAGEMENT: OPPORTUNITY FOR CHANGE

Stroke management has traditionally been limited to supportive care following an initial acute event. However, in 1996 stroke management was revolutionized with the landmark National Institute of Neurological Disease & Stroke (NINDS) study demonstrating the efficacy of *tissue plasminogen activator* (tPA) in treating ischemic stroke (defined as a blood clot blocking an artery in the brain). When delivered promptly after symptom onset, tPA has been shown effective for many patients in reversing a stroke in process and in preventing or reducing permanent brain injury. This advance allows strokes to be treated directly by removing blockages and restoring blood flow with a concomitant decrease in death, disability and financial burden caused by stroke.

Yet delivery of tPA, the ONLY FDA-approved treatment for stroke, must be accomplished immediately after the onset of symptoms. Thus successful treatment depends upon a "chain of survival" that includes symptom recognition by the patient, rapid EMS dispatch and transportation, communication and delivery to the appropriate hospital emergency facility, and protocols and teams readily available to meet the patient upon arrival to evaluate and deliver time critical treatment. When one of these links of the chain fails, the entire process fails.

In states such as Massachusetts, Connecticut, New York, New Jersey and Florida, organized systems of stroke care have been established. Yet, despite mounting evidence and support in favor of delivering acute stroke care through uniquely equipped hospitals, only a minority of RI hospitals are equipped and staffed to provide this care to every patient on a 24/7 basis. As it is impractical to maintain every hospital as a stroke center, the effective management of acute stroke requires a regional collaboration of hospitals in order to deliver patients the most

appropriate care. Treating stroke in the manner described has evolved into a "standard of care" that hospitals, states and regional systems will be measured against. Failure to establish or utilize such an organized system of stroke care has consequently created precedent for adverse patients outcomes generating significant medical liability cases.

SUMMARY OF FINDINGS

While medical science has seen dramatic advances in stroke care, Rhode Island has lagged behind in establishing a statewide integrated and coordinated response to stroke care. In neighboring states, as well as nationally, systems of stroke care have been adopted and dramatic improvements in care have taken place. The Rhode Island Stroke Task Force feels confidant that our state is poised to implement significant advances in stroke care. We possess the medical knowledge, resources and motivation and our unique geographic size places us in a unique position to have one of the most successful systems for saving lives from stroke in the US.

The following specific findings have been identified through the Stroke Task Force's work to date:

1. *The concept of specialized "Acute Stroke Care" is widely accepted standard of care at a national level. The priority use of hospital "Stroke Centers" has been demonstrated to provide superior stroke care and outcomes at all levels and should be the destination of choice for acute stroke victims.*
2. *Acute Stroke Care is most effective when delivered as part of a statewide "Stroke System" that links designated Stroke Centers with other local hospitals.*
3. *Only one of Rhode Island's eleven acute care hospitals is presently certified as a Stroke Center by a nationally recognized accrediting body (Joint Commission). Two others are currently in the process of certification and provide quality stroke care.*
4. *Only one of RI's five Acute Rehabilitation Centers is a CARF (Commission on Accreditation of Rehabilitation Facilities)-accredited stroke rehabilitation center.*
5. *Approximately half of Rhode Island stroke victims do not receive Acute Stroke Care as described herein.*
6. *Rhode Island's statewide EMS system lacks a coordinated plan to deliver acute stroke patients to the most appropriate hospital. Many RI stroke patients are transported to hospitals not equipped to provide definitive treatment, losing valuable time and potentially missing the window of opportunity to treat the evolving stroke.*
7. *Diminishing reimbursement from third party payers combines with shorter lengths of stay to prematurely removes patients from the most optimal environment for initial treatment, secondary prevention and rehabilitation pushes patients*

The Stroke Task Force has identified the following obstacles to implementing a system of optimum stroke care in Rhode Island:

1. *Hospitals without acute stroke care capability may be reluctant to give up their patients for transfer to designated Stroke Centers out of concern for the loss of revenue and local physician follow-up represented by such transfers.*
2. *The RI Department of Health's ability to facilitate or oversee such a system is severely compromised by limited resources and a current policy of not accrediting hospitals.*
3. *Rhode Island's statewide EMS system is under-funded and lacks sufficient statewide coordination, posing significant challenges for implementing a new coordinated system of pre-hospital stroke care (though the Department of Health does have the statutory authority to do so.)*

4. *External funding for statewide stroke system oversight will likely be difficult to come by and even more difficult to sustain.*

INITIAL RECOMMENDATIONS

Rhode Island does not presently enjoy an integrated statewide system of stroke care and rehabilitation. This reduces the likelihood of positive outcomes for stroke victims and creates an ever-increasing social and financial burden for the State. As a result of the analysis conducted by the Stroke Task Force we make the following observations and recommendations:

1. *A statewide Stroke System of Care should be established with oversight and coordination by the Rhode Island Department of Health and its Stroke Task Force. All components of this system should adopt and follow standardized stroke care protocols that are consistent with current nationally accepted guidelines for screening, transferring, treating, and rehabilitating all patients with a history or suspected history of stroke or transient ischemic events.*
2. *Rhode Island's stroke care system should be part of a broader statewide plan to improve prevention and treatment of all cardiovascular disease.*
3. *Consistency of stroke care among all of Rhode Island's hospitals should be accomplished through greater oversight by the Department of Health. This should include a process for designation of "Primary Stroke Centers" by the Department of Health, though actual accreditation might be accomplished through an outside organization such as the Joint Commission.*
4. *The Department of Health should establish and maintain a public education campaign designed to make the general public sufficiently aware of stroke warning signs, risk factors and the need for early access to the emergency medical system for suspected stroke patients.*
5. *The Department of Health should re-establish greater central coordination and quality control for the statewide EMS system in order to ensure EMS providers deliver the quality of care needed by acute stroke victims. The State Legislature will need to allocate new funding and resources to re-invigorate the state EMS system.*
6. *The State's pre-hospital Stroke Protocol should be updated to reflect recent advances in stroke triage/care and to ensure EMS providers transport suspected stroke patients to designated "Primary Stroke Centers" (see #3 above.)*
7. *The state's fragmented approach to dispatching emergency services should be better coordinated, particularly with respect to adopting national standards for training and credentialing emergency medical dispatch personnel. All EMS dispatchers should be trained on stroke-specific guidance; quality-assurance processes should be in place to ensure compliance.*
8. *Data collection and analysis mechanisms should be established that allow the Department of Health to monitor patient outcomes and ensure compliance with accepted treatment guidelines. Data should be collected and integrated from all components of the Stroke System of Care with particular attention paid to pre-hospital care and access to designated "Primary Stroke Centers." This data collection and management process should reflect current nationally accepted standards.*
9. *Post-stroke rehabilitative care should be an integral part of the state's stroke care system. A standardized screening and assessment tool should be employed to measure functional status during post-stroke rehabilitative care.*
10. *The Stroke System of Care should include continual processes to identify and mitigate barriers that prevent stroke patients from accessing and receiving appropriate, definitive care.*

Achieving this goal will require the commitment of many players in the state's healthcare community. Of these, the Rhode Island Department of Health must take a key leadership and oversight role to develop this initiative, with the support of the American Stroke Association, a division of the American Heart Association, and the continued efforts of the Rhode Island Stroke Task Force.

REFERENCES

1. National Institute of Neurological Disorders and Stroke. National Institutes of Health. *Improving the Chain of Recovery for Acute Stroke in Your Community.* Available at http://www.ninds.nih.gov/news_and_events/proceedings/acute_stroke_workshop.pdf. Accessed January 15, 2008
2. Schwamm LH, Pancioli AM, Acker JE, 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. Stroke 2005;36
3. Acker JE, Pancioli AM, Crocco TJ, 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;38:3097-3115.
4. Park, Soojin; Schwamm, Lee H. Organizing regional stroke systems of care. Current Opinion in Neurology. 21(1):43-55, February 2008
5. *Recommendations for the Establishment of Primary Stroke Centers* published in the Journal of the American Medical Association (2000) provides a consensus statement that stroke care would be improved by designation of acute stroke hospitals and provides guidelines for establishment of such stroke centers. This document serves today as the mainstay for stroke center designation by the Joint C A Hospitals O (JCAHO). (Appendix C).
6. A 2007 update on stroke care from initial EMS contact to post-hospital rehabilitation was published in the AHA document *Guidelines for the Early Management of Adults with Ischemic Stroke* (Appendix E) and reviewed in the journal Stroke. These guidelines represent the latest consensus and the best healthcare policy and care practices for stroke management.