

FACTS

Laying the Cornerstones for Systems of Care Primary Stroke Centers

OVERVIEW

Stroke is the fourth leading cause of death and a leading cause of disability among Americans.¹ However, many hospitals do not have the necessary personnel, equipment, and organization to triage and treat patients with stroke rapidly and effectively. According to a survey of facilities in North Carolina, for example, 69% of hospitals did not have a stroke team or rapid identification for patients experiencing acute stroke.² The lack of adequate acute stroke care capabilities in many hospitals endangers the lives of the thousands of Americans who suffer strokes each year.

One approach to improving the stroke care infrastructure is the establishment of stroke centers - hospitals that have the expertise and infrastructure to deliver high quality stroke care.³

There are two types of stroke centers – primary and comprehensive. Primary Stroke Centers (PSCs) have the ability to stabilize and provide emergency care for patients with acute stroke, while Comprehensive Stroke Centers (CSCs) can provide more specialized care for patients with complex strokes. Both are important elements in delivering high quality care to stroke patients, but this document focuses on PSCs.

ELEMENTS OF PSCs

The Brain Attack Coalition (BAC), a multidisciplinary organization that includes most major medical organizations involved with stroke care, created a series of recommendations outlining the most important elements of PSCs.³ Their proposal supports: patient self-management; treatment tailored to individual needs; adherence to evidence-based guidelines; and continual improvement of stroke care. More specifically, the BAC recommends that primary stroke centers have the following infrastructure and capabilities.

- **Acute Stroke Teams:** Members include, at a minimum, a physician and another health care practitioner that are available 24 hours a day and able to be at the bedside of a possible stroke patient within 15 minutes of arrival. Ideally, a neurologist or neurosurgeon will be a member of the team because these physicians have stroke expertise.
- **Written Care Protocols:** Adherence to stroke

protocols improves the care that patients receive. Written protocols should be available in the ED and other areas where stroke patients are likely to receive care. They should be reviewed and updated by the stroke team at least once a year.

- **Coordination with Emergency Medical Services:** Given that EMS plays a vital role in delivering timely care to patients with stroke, the EMS must be integrated into the PSC.
- **Emergency Department Commitment:** The ED is normally the first point of contact between the patient and the medical facility. ED personnel should be trained to diagnose and treat all types of acute stroke.
- **Stroke Unit:** Patients who receive care in stroke units have better outcomes than those that receive care in general medical wards.
- **Neurosurgical Services:** Although not all hospitals can have a neurosurgeon on staff, neurological care should be available to patients within 2 hours, even if that requires patient transport.
- **Support of the Medical Organization:** A hospital's administration and staff drive the quality of stroke care, so it is important that a facility's leadership is committed to high quality, efficient stroke care.
- **Neuroimaging and Laboratory Services:** Access to brain imaging and laboratory services, either in the hospital or through teleradiology, is critical to a hospital's ability to rapidly diagnose a patient.
- **Outcome and Quality Improvement Activities:** Studies show that improvement programs improve the quality of care received by stroke patients.⁴
- **Continuing Medical Education:** The science surrounding the diagnosis and treatment of cerebrovascular disease is constantly changing, and staff should continually be updating their knowledge.

THE PSC CERTIFICATION PROCESS



American Heart Association
American Stroke Association
CERTIFICATION
Meets standards for
Primary Stroke Center

PSC designation requires a recognized outside entity to review a hospital's credentials to determine whether the hospital meets established requirements. Specific

requirements may vary between different designating entities, but in general, hospitals must show a commitment to delivering excellent stroke care based on BAC guidelines. The process ensures that all PSCs deliver a standard quality of care to patients.⁵

Although many entities, including several states, have developed their own designation processes, the American Heart Association/American Stroke Association (AHA/ASA) and The Joint Commission (TJC) have the largest and most well-known PSC certification program. It is able to combine the scientific knowledge of the Associations with the health care facility evaluation experience of TJC. The heart check mark signifies hospitals that have been certified by the AHA/ASA and TJC.

PSCs DELIVER HIGH QUALITY CARE

PSCs were designed to improve the efficiency of patient care and increase the use of acute stroke therapies so that there are fewer peristroke complications, reduced morbidity and mortality, improved long-term outcomes, and increased patient satisfaction.³

In fact, hospitals that meet BAC's recommendations for PSCs deliver higher quality care to stroke patients.^{6,7} Additionally, certified PSCs have lower mortality rates and higher use of thrombolytic therapies.⁸

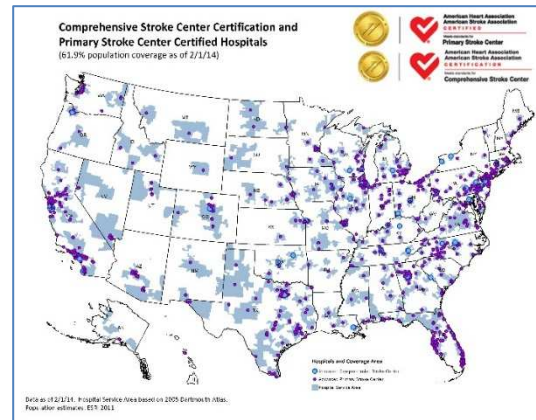
PSCs SUPPORT STROKE SYSTEMS OF CARE

A coordinated, comprehensive stroke system facilitates patient access to the full range of stroke services and improves the quality of care that patients receive.⁹ It addresses the full continuum of stroke care including prevention, treatment and rehabilitation.

PSCs are integral to a stroke system of care. An important element of a high quality stroke system is the ability to quickly and effectively triage stroke patients so that they can receive timely and appropriate care. The first step of this process is fast transport of all individuals with signs or symptoms of stroke to primary stroke centers where they can be evaluated and stabilized. Next, patients are either admitted to the PSC or transported to a CSC to receive further treatment depending on the severity of their stroke. This system not only enables patients to receive the right care, but also supports efficient care delivery.

ACCESS TO PSCs VARIES

Although PSCs enhance the quality of stroke care, improve patient outcomes, and promote efficient health care delivery, access to PSCs varies by region.¹⁰ In fact, recent studies show that over 50% of the US population is not within 60 minutes of a PSC.¹¹



Source: American Heart Association data as of February 2014.

The presence of a state stroke program improves the likelihood that hospitals will become PSCs and therefore states can play a substantial role in promoting their development.¹⁰ Improving access to PSCs can improve care for the thousands of Americans who suffer strokes each year.

THE ASSOCIATION ADVOCATES

The American Heart Association/American Stroke Association supports the development and certification of PSCs to improve the quality of acute stroke care, support stroke systems of care, and improve access to life-saving stroke care, believing that all Americans should be able to access the high quality stroke care that PSCs can provide.

Specifically, the AHA/ASA encourages:

- States to formally recognize PSC certification through legislation or regulation.
- States to develop comprehensive and coordinated stroke systems of care which recognize PSCs as being cornerstone to effective systems development.

¹ Go, AS, et al. Heart Disease and Stroke Statistics -- 2014 Update: A Report From the American Heart Association. *Circulation*. December 18, 2013.
² Goldstein L. North Carolina stroke prevention and treatment facilities survey. *Stroke*. 2000;31:66-70.
³ Alberts MJ, Hademenos G, Latchaw RE, et al. Recommendations for the Establishment of Primary Stroke Centers. *JAMA*. 2000; 283(3): 3102-3109.
⁴ Newell SD Jr, Englert J, Box-Taylor A, Davis KM, Koch KE. Clinical efficiency tools improve stroke management in a rural southern health system. *Stroke*. 1998;29:1092-1098.
⁵ Adams R, Acker J, Alberts M, et al. Recommendations for Improving the Quality of Care Through Stroke Centers and Systems: An Examination of Stroke Center Identification Options. *Stroke*. 2002; 33: e1-e7.
⁶ Lattimore SU, Chalela J, Davis L, et al. Impact of Establishing a Primary Stroke Center at a Community Hospital on the Use of Thrombolytic Therapy. *Stroke*. 2003; 34: e55-e57.
⁷ Douglas VC, Tong DC, Gillum LA, et al. Do the Brain Attack Coalition's criteria for stroke centers improve care for ischemic stroke? *Neurology*. 2005; 64(3): 422-427.
⁸ Xian Y, Holloway RG, Chan PS, et al. Association Between Stroke Center Hospitalization for Acute Ischemic Stroke and Mortality. *JAMA*. 2011; 305(4): 373-380.
⁹ Schwamm LH, Pancioli A, 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; 26: 690-703.
¹⁰ Anderson P. State Stroke Programs Affect Number of Stroke Centers. *Medscape Today*. May 25, 2011. <http://www.medscape.com/viewarticle/743399>
¹¹ Alberts, MJ et al. Formation and Function of Acute Stroke-Ready Hospitals Within a Stroke System of Care Recommendations From the Brain Attached Coalition. *Stroke*. November 12, 2013.