



# Laying the Cornerstones for Systems of Care

## Primary Stroke Centers

### OVERVIEW

Stroke is the fifth leading cause of death and a leading cause of disability among American adults.<sup>1,2</sup> Each year, approximately 795,000 people suffer from a stroke in the United States.<sup>2</sup> Despite its prevalence, many hospitals do not have the necessary personnel, equipment, and organization to triage and treat patients with stroke rapidly and effectively. A study published in 2019 found that only 37% of US hospitals were certified stroke centers.<sup>3</sup> Stroke centers have stroke specific infrastructure, including acute stroke teams, stroke units, care protocols, and other support systems for stroke patients which increase the use of diagnostic and therapeutic treatments, reducing stroke complications and improving overall stroke care.<sup>4</sup>

Four types of stroke centers specialize in different aspects of stroke care:<sup>5</sup>

- Acute Stroke-Ready Hospitals (ASRHs) perform rapid stroke assessment and stabilization for patients experiencing stroke.
- Primary Stroke Centers (PSCs) have dedicated stroke teams that can stabilize and provide emergency care for patients with acute strokes.
- Thrombectomy Capable Stroke Centers (TSCs) can provide 24/7 care for patients with acute ischemic strokes and can perform mechanical thrombectomies, a procedure used to remove blood clots
- Comprehensive Stroke Centers (CSCs) have extensive teams of vascular surgeons and neurosurgeons that provide more specialized care for patients with complex strokes.

This fact sheet explores PSCs, specifically including what makes them unique and effective.

### 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.<sup>6</sup> Their proposal supports patient self-management, treatment tailored to individual needs, adherence to evidence-based guidelines, and continual improvement of stroke care. 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 patient arrival. Ideally, a neurologist, neurosurgeon, or a provider with expertise in cerebrovascular disease will be a member of the team.

**Written Care Protocols:** Adherence to stroke protocols improves the care that patients receive and reduces complications. Written protocols should be available in the emergency department (ED) and other areas where stroke patients are likely to receive care and 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 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:

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specialists.<sup>17</sup> States with stroke related legislation had a greater increase of PSCs than states without stroke legislation, which in turn decreases stroke complications and mortality.<sup>13</sup>

## 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 a