



## Creating Optimal Systems of Care for Stroke Treatment

### The American Heart Association's Position

- Optimal stroke systems of care should be in place to facilitate the delivery of quality stroke care.
- Stroke systems of care should assist communities and providers in initiating prevention regimens that are applicable to broader populations.
- Stroke systems of care should support local and regional educational initiatives to increase stroke awareness, particularly among at-risk populations.
- Public education programs focused on stroke systems of care and patients' needs in seeking emergency care (by calling 9-1-1) should be designed and implemented.
- Emergency triage protocols should be developed and implemented to ensure that all known or suspected stroke patients are rapidly identified and assessed using a validated and standardized instrument for stroke screening, such as the Face Arm Speech Time (FAST) algorithm, the Los Angeles Prehospital Stroke Scale (LAPSS), or the Cincinnati Prehospital Stroke Scale (CPSS).<sup>7</sup>
- The Comprehensive Stroke Center, Primary Stroke Center, Thrombectomy Capable Stroke Center, and Acute Stroke Ready Hospital framework provide appropriate certification platforms for hospital-based processes of stroke care.
- All stroke centers should develop a definitive plan for identification and treatment of thrombectomy-eligible patients, which should include parenchymal or arterial imaging (CT or MR).
- Support systems should be established to ensure that all stroke patients who are discharged from a hospital have primary and specialized care arranged at home.
- All stroke survivors should receive a standardized screening evaluation during their initial hospitalization to determine if rehabilitation services are needed, and the type, timing, location, and duration of such therapy.
- Efforts should be made to advance the use of technology and patient-reported outcomes as well as to facilitate improved transitions in stroke care.

### Fast Facts

1. Approximately 795,000 people in the US have a new or recurrent stroke each year.<sup>1</sup>
2. A system of care that reduces stroke-related deaths by just 2-3% annually would translate into 20,000 fewer deaths in the US alone and ~400,000 fewer deaths worldwide.<sup>2</sup>
3. Stroke incidence and hospitalizations have increased by more than 40% in young adults in the past decade. However nearly 30% of US adults under the age of 45 surveyed in the 2017 National Health Interview Survey were unaware of at least one of the five most common stroke symptoms.<sup>3</sup> Awareness was lowest among those who were Hispanic, low income, and born outside of the US.<sup>3</sup>
4. A study published in 2021 found that only 58% to 62% Emergency Medical Service (EMS) encounters in Florida for suspected stroke met the American Stroke Association's benchmarks for timely EMS intervention.<sup>4</sup>
5. Primary Stroke Centers have lower in-hospital, 30-day, and 1-year mortality than non-stroke centers.<sup>5</sup>
6. Post-acute stroke care is highly variable and fragmented. While many patients receive post-acute care from inpatient rehabilitation facilities or skilled nursing facilities, one in four stroke survivors is discharged home from the hospital within 4 days of their stroke without any additional services despite still experiencing the physical and cognitive aftereffects of stroke. Stroke patients report that transitions from the hospital to home were challenging, particularly around receiving post-acute care.<sup>6</sup>

For more information and resources from the American Heart Association’s policy research department on stroke systems of care, please visit: <https://www.heart.org/en/about-us/policy-research>.

## References

- <sup>1</sup> Virani, S.S, Alonso, A., Aparicio, H., et al. Heart disease and stroke statistics—2021 update: a report from the American Heart Association. *Circulation* 2021, 143, e254-e743.
- <sup>2</sup> Adeoye, O., Nyström, K.V., Yavagal, D.R., et al. Recommendations for the Establishment of Stroke Systems of Care: A 2019 Update. *Stroke*. 2019;50:e187-e210
- <sup>3</sup> Mszar R, Mahajan S, Valero-Elizondo J, et al. Association between sociodemographic determinants and disparities in stroke symptom awareness among US young adults. *Stroke*. 2020;51(12):3552-3561.
- <sup>4</sup> Heemskerk JL, Domingo RA, Tawk RG, et al. Time Is Brain: Prehospital Emergency Medical Services Response Times for Suspected Stroke and Effects of Prehospital Interventions. *Mayo Clin Proc*. 2021;96(6):1446-1457.
- <sup>5</sup> Man, S., Schold, J.D., Uchino, K. Impact of Stroke Center Certification on Mortality After Ischemic Stroke. *Stroke*. 2017;48:2527-2533.
- <sup>6</sup> Duncan PW, Bushnell C, Sissine M, et al. Comprehensive stroke care and outcomes. *Stroke*. 2021;52(1):385-393.
- <sup>7</sup> Zhelev, Z., Walker, G., Henschke, N., et al. Prehospital stroke scales as screening tools for early identification of stroke and transient ischemic attack. *Cochrane Database of Systematic Reviews*. 2019;(4).