



NAEMT Position Statement Value of EMS Stroke Education

Statement:

NAEMT believes EMS practitioners should receive continuing education and skills training in prehospital stroke assessment and treatment to improve their ability to accurately and rapidly assess acute stroke patients and make appropriate decisions on transport destinations where patients can access currently recommended therapies. This includes identification of Large Vessel Occlusion (LVO) strokes.

Background:

Each year in the United States there are 795,000 incidents of stroke, killing 128,000 people (about 1 out of every 19 deaths per year). Stroke is the leading cause of disability in the U.S. and the fifth cause of death among U.S. adults. The vast majority of strokes (87 percent) are ischemic strokes, caused by a blood clot in the blood vessels of the brain.ⁱ

Identifying symptoms of stroke can be difficult in many circumstances and presents unique challenges in the prehospital environment. The presentation of a stroke can be subtle or dramatic. While patients usually have an array of symptoms, sometimes only a single symptom may be present. A stroke may occur while sleeping, and the patient is not aware until he or she awakens. Many causes of altered mental status or neurological conditions can mimic a stroke.ⁱⁱ

Patients with acute stroke symptoms may demonstrate a variety of signs and symptoms in the prehospital environment. Rapid assessment is essential in identifying and treating these patients. Additionally, determining the appropriate destination treatment center can be complex. Currently, no one assessment tool (recognition or stroke severity scale) has been shown to be superior or provides a clear means for identifying patients with large vessel occlusion strokes or patients who may benefit from mechanical retrieval therapies. Additional education and research is required to assist prehospital providers in making these determinations. EMS practitioners must be trained to quickly identify the presence of stroke and determine the best method to get their patients to appropriate care.ⁱⁱⁱ

Currently, there are several tools to help recognize or determine severity of stroke in the field. The Cincinnati Prehospital Stroke Scale (CPSS)^{iv}, Cincinnati Prehospital Stroke Severity Scale (CPSSS)^v, the Los Angeles Prehospital Stroke Scale (LAPSS)^v, the Rapid Arterial Occlusion Evaluation (RACE)^{vi}, modified RACE, Prehospital Acute Stroke Severity (PASS)^{vii}, and Vision, Aphasia, Neglect (VAN)^{viii} are some of the more widely used tools in EMS. The National Institute of Health Stroke Scale (NIHSS) is often used in the hospital and critical care transport environments. Additional research and clinical validation should be undertaken in order to

determine which tools provide the best information for the prehospital provider. Local and regional collaboration processes should be utilized to determine which scale is to be implemented.

ⁱ Heart Disease and Stroke Statistics 2016 Update: A Report from the American Heart Association, January 26, 2016.

ⁱⁱ Advance Medical Life Support Second Edition, Chapter 5, Neurological Disorders, 2017, National Association of Emergency Medical Technicians.

ⁱⁱⁱ Maggiore, W.A. (2012) 'Time is Brain' in Prehospital Stroke Treatment, *Journal of Emergency Medical Services*, 1-9.

^{iv} Kothari, R.U., Pancioli, A., Liu, T., Broderick, J., "Cincinnati Prehospital Stroke Scale: reproducibility and validity, *Annual of Emergency Medicine* April, 1999.

^v Kidwell, C.S., Starkman, S., Eckstein, M., Weems, K., Saver, J.L., "Identifying Stroke in the field. Prospective validation of the Los Angeles prehospital stroke screen (LAPSS)," *Stroke*, January, 2000.

^{vi} Perez de la Ossa, N., Carrera, D., Gorchs, M., et. al., "Design and validation of prehospital stroke scale to predict large arterial occlusion: the rapid occlusion evaluation scale." *Stroke*, January, 2014.

^{vii} Benaim, D., Perennou, D.A., Villy, J. Rousseaux, M., and Pelissier, J., "Validation of a Standardized Assessment of Postural Control in Stroke Patients," *Stroke*, 1999.

^{viii} Teleb, M., Hage, A.V., Carter, J., Jayaraman, M.V., McTaggart, R.A., "Stroke vision, aphasia, neglect (VAN) assessment—a novel emergent large vessel occlusion screening tool: pilot study and comparison with current clinical severity indices," *Journal of Neurointerventional Surgery*, February, 2016

Adopted: April 9, 2018