

# Mobile stroke treatment units may greatly improve survival rates, chance of recovery for ischemic stroke patients

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Two new studies presented today at the Society of NeuroInterventional Surgery 12th Annual Meeting in San Francisco, report that Mobile Stroke Treatment Units (MSTUs) can significantly reduce the time it takes to diagnose and treat patients for stroke, greatly improving survival rates and enhancing a patient's chance of recovery.

There are currently four MSTUs in use worldwide. Two are in Germany and two are in the United States (U.S.) - one in Cleveland and one in Houston. MSTUs resemble ambulances on the outside, but contain highly specialized staff, equipment and medications strictly used for diagnosing and treating strokes. Specifically, they are equipped with diagnostic tools and telemedicine capabilities that facilitate real-time communication with hospital-based stroke specialists, enabling immediate diagnosis and the administration of IV tPA for eligible [patients](#) while en route to the hospital.

"Determining and facilitating the correct treatment in the shortest amount of time is the most important part of treating stroke, as any delay in treatment can be deadly," said Dr. Shazam Hussain, Head of the Cleveland Clinic Stroke Program. "Time is never on our side, but it's clear that Mobile Stroke Treatment Units offer the best chance for patients to receive care as fast as possible, sometimes beginning before the patient even arrives at a facility."

Mobile Stroke Treatment Unit and Golden Hour Thrombolysis for Emergent Large Vessel Occlusion: Initial Experience conducted at the Cleveland Clinic in Cleveland, Ohio, examined patients who received IV tPA from MSTUs and found that it improved flow restoration rates for emergent large vessel occlusion (clots) strokes (ELVO) that were treated in the "golden hour" following symptom onset. Additionally, MSTUs reduced time for qualifying patients to receive intra-arterial therapy (IAT), treatment that is administered through the arteries directly to the clot site, for ELVO strokes. A second study, Triage of Emergent Large Vessel Occlusion Strokes with the Mobile Stroke Treatment Unit, also conducted at the Cleveland Clinic, found that among study subjects who received intra-arterial therapy or IAT (treatment that is administered through the arteries directly to the clot site), MSTUs significantly reduced numerous time intervals along the emergency stroke care continuum in comparison to controls, including dispatch to door (19min vs. 31min,  $p=0.03$ ), door to initial CT (12min vs. 32min,  $p=0.01$ ), and CT to IAT (82min vs. 165min,  $p=0.01$ ).

Other studies support the need for the capabilities of MSTUs. In ESCAPE, a widely recognized stroke study earlier this year, researchers found that routing patients directly to a comprehensive stroke center may significantly decrease patient wait time for treatment. According to the Centers for Disease Control and Prevention (CDC), stroke is the fifth leading cause of death in the U.S. and a major cause of adult disability. About 800,000 people in the U.S. have a stroke each year and one American dies from a [stroke](#) every 4 minutes, on average. Although advances in [stroke treatment](#) over the last decade have improved patient survival rates, prompt treatment upon [symptom onset](#) is still the key to not only survival but also avoiding long-term disability.

Provided by Society of NeuroInterventional Surgery

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