Telestroke is the application of telemedicine to stroke. The use of telemedicine in the ambulance for more precise and rapid prehospital/EMS care of acute stroke patients including performing an NIHSS analysis dates back to 1988 and now with innovative Mobile Stroke Units (MSUs) equipped with head CT scanning in the ambulance, patients are now given intravenous t-PA for acute ischemic stroke prior to hospital arrival in Germany and now in Houston and Cleveland. These studies and their cost effectiveness will be reviewed as will new telemedicine technologies in development for acute stroke. The future should see further research emphasizing better study design and larger sample size to improve reliability of results and conclusions, wearable technology (head-mounted displays), further reductions in response times with incorporating smartphone technology into EMS and thus facilitate patient or bystander incident reporting and prehospital triage—Primary Stroke Center vs. Comprehensive Stroke Center (IA/mechanical thrombectomy)/Neurosurgery for SAH/ICH. Although technological advances will continue to outpace their utilization in clinical practice incorporating emerging technologies into medical practice holds promise in improving care and enhancing clinical outcomes and researchers must continue to evaluate the effectiveness of telemedicine so that communication technology-assisted care is optimized.

Biography

Steven R Levine is a distinguished Professor of Neurology & Emergency Medicine and Vice Chairman of Neurology, College of Medicine at SUNY Downstate Medical Center in Brooklyn, NY. He is also an Associate Dean for Clinical Research & Faculty Development. He completed his Neurology Residency at University of Michigan, and did a 2-year stroke research fellowship. He is a Board Certified Vascular Neurology. He was the Detroit area PI for the NIH-funded NINDS rt-PA Stroke Trial that led to FDA approval of the first treatment for acute ischemic stroke—tissue plasminogen activator (tPA). He serves/served on the Editorial Boards of several peer-reviewed journals and serves as a consultant for NIH, AHA/ASA, NSA and the pharmaceutical industry. He is a local PI for 2 NIH/NINDS-funded clinical trial networks (NETT, NeuroNEXT). He has published over 175 peer-reviewed original papers, 19 case reports, 3 books, 63 book chapters, 71 reviews/invited articles and 33 editorials.

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