The Advanced Stroke Life Support® Course Significantly Improves Knowledge of Stroke Diagnosis and Management for Prehospital and Hospital-based Providers

Evelyn Valdes Anzardo, Ivette Motola, Al A. Brotons, Steven Carter, Richard Rodriguez, S. Barry Issenberg

Gordon Center for Simulation and Innovation in Medical Education, University of Miami Miller School of Medicine, Miami, FL

Background
- Comprehensive stroke education is necessary for rapid and effective diagnosis and treatment of stroke victims, especially in the prehospital and emergency department settings.
- Early acute stroke recognition and appropriate treatment lead to improved patient outcomes.
- Prehospital and hospital-based healthcare providers can make the difference between the opportunity for recovery, or a life of long-term disability, and even death.
- The ASLS® course was originally developed in 1998 by a group of subject matter experts in stroke neurology, emergency medicine, neuroscience nursing, emergency medical services (EMS), medical education, and simulation.
- Previous studies have shown the effectiveness of the ASLS® course in improving stroke knowledge and skills in a smaller cohort.

Methods
- Participants throughout the U.S. participated in the Advanced Stroke Life Support® - a one-day, evidence-based, stroke course consisting of 3.5 hours of didactic lectures and 4.5 hours of interactive large- and small-group skills sessions.
- The didactic lectures consisted of discussions on stroke epidemiology, pathophysiology, anatomy, and recognition and management of major stroke syndromes and their mimics.
- The interactive sessions included video-based cases where the learners diagnosed and developed a management plan for patients with strokes or stroke mimics.
- In the skills sessions, learners used a standardized assessment tool, including the Cincinnati Prehospital Stroke Scale (CPSS)/FAST, Miami Emergency Neurological Deficit (MEND) Examination, National Institutes of Health Stroke Scale (NIHSS) to examine simulated patients portraying major stroke syndromes, and determined a diagnosis and management plan.
- Learners participated in an interactive review game, “Who Wants to be a Strokeologist?”, prior to taking the postcourse examination.
- The course was taught at approved ASLS® training centers or satellites by instructors who had successfully completed the ASLS® Instructor course, a comprehensive train-the-trainer program.
- Outcomes were measured using previously validated, 25-item, content-anchored pre-course and post-course assessments linked to the course objectives.
- Prehospital and hospital-based healthcare personnel who completed an ASLS® course between November 19, 2014 and May 31, 2017, were included in the analysis.
- Data were analyzed with paired samples t-tests using IBM SPSS, v.24.

Curriculum Examples and Course Photographs

Results
- A total of 9,678 participants were included in statistical analyses.
- Participants included nurses (62%), paramedics (34%), EMTs (10%), and other professions, including physicians, physician assistants, and occupational and respiratory therapists from agencies across 20 states throughout the United States.
- Learners demonstrated a statistically significant increase in knowledge from pre- to post-course assessment; from a pre-course mean of 64.4% to a mean of 89.1% at post-course assessment (p < .001).
- Statistically significant increases in knowledge also occurred within both learner groups. Performance for prehospital learners increased 63.8% to 89% (p < .001), and hospital-based learners increased 64.8% to 88.6% (p < .001).

Conclusions
- The early recognition of stroke is critical for providing appropriate care and timely management.
- Training healthcare personnel in a standardized, effective curriculum on stroke can lead to improved detection and management of stroke patients.
- Prehospital and hospital-based providers who participated in the ASLS® one-day course significantly improved their knowledge of stroke diagnosis and management.

References

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