

Improvement in Paramedic Examination Skills Following a Stroke Course

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Abstract

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Introduction: The need to decrease time to treatment for acute stroke patients means that prehospital providers must play an increased role in their care. This is possible only if emergency medical services personnel are able to rapidly recognize and assess patients with neurologic syndromes. **Purpose:** To assess the performance of a focused neurologic exam by prehospital providers before and after participation in an interactive stroke course. **Methods:** We developed a 1-day emergency stroke course that consists of 2 hours of lectures and 6 hours of interactive instruction, including small-group sessions led by paramedic instructors as standardized patients (SPs) portraying 5 key neurologic syndromes: left hemisphere, right hemisphere, brainstem, cerebellum, and subarachnoid hemorrhage. We devised a 53-point skills checklist to evaluate paramedic performance of history, exam, management, and emergency department (ED) reporting during 2 pre- and 2 postcourse encounters with actors portraying one of 4 scenarios: left hemisphere stroke, right hemisphere stroke, right hemisphere seizure with postictal hemiparesis, and left hemisphere tumor with sudden worsening. Among the 53 total skills evaluated were 28 exam-related items, including traditional paramedic exam items such as pupil reaction, hand grasp, and foot strength and additional items from the Miami Emergency Neurologic Deficit (MEND) Exam. We randomly selected 46 of 281 learners to participate in the study. **Results:** Checklist scores for neurologic exam performance improved significantly. The precourse mean score for the 46 learners was 3.38 (12.1%) and the postcourse mean was 21.4 (76.4%) ($p < .001$). **Conclusions:** Paramedics significantly improved their performance of a focused neurologic exam after attending a stroke course utilizing paramedic instructors as SPs with key stroke syndromes. We conclude that prehospital providers can learn and perform a brief, focused neurologic exam after attending a 1-day stroke course that emphasizes hands-on instruction. We are continuing to evaluate the effect of the course on the history-taking, ED-reporting, and stroke-management skills of practicing paramedics.
