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*A Non-Profit Cooperative to Improve Health Care and Reduce Members' Costs*

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## **Confounding Primary Impressions Among Patients Who Experienced CVA/Stroke in the Pre-hospital Environment**

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**Purpose/Background:** The goal was to determine which patient presentation(s) commonly confound paramedics in the identification of CVA/Stroke in the pre-hospital environment. Paramedics in our system are initially trained to evaluate for CVA/Stroke utilizing the Cincinnati Stroke Scale per State guidelines and system SOP; however, there are no specific continuing education (CEU) requirements regarding CVA/Stroke care.

### **Objectives:**

Patient presentations masking the typical signs and symptoms of CVA/Stroke may require healthcare providers to exhibit a higher index of suspicion during primary history and physical.

### **Design/Methods:**

A retrospective query of hospital admission records from three New Jersey hospitals was performed during the timeframe of January 1, 2011 and November 30, 2012, identifying patients diagnosed with acute stroke. Of these patients selected, 566 were seen pre-hospital by paramedics. Accurate identification or screening of the stroke patient by NJ Paramedics was then determined from the data recorded in the pre-hospital patient care reports (PCRs). Patients with a documented primary or secondary impression of stroke or details of stroke signs and symptoms in the narrative of the PCR, were considered positively identified. Charts where CVA/Stroke was not identified by the paramedics were categorized by primary impression.

### **Results:**

Of the 566 patients, 459 (81%) had a primary or secondary impression of CVA/Stroke or had a descriptive narrative of the signs and symptoms of a CVA/Stroke. 107 patients (19%) were not identified as CVA/Stroke by the ALS providers. Of the 107 patients, there were 17 (16%) who were unconscious and could not be further evaluated for CVA or Stroke. The remaining 90 patients' complaints were as follows: altered mental status 41 patients (38%), general weakness 23 patients (22%), dizzy/headache 18 patients (17%), sick not feeling well 8 patients (7%). 58 (54%) of the 107 patients who were not identified as CVA/Stroke, could not have been properly evaluated by paramedics using common pre-hospital stroke screening tools such as the Cincinnati Stroke Scale due to unconsciousness or altered mental status.

### **Conclusions/Implications for Practice:**

Paramedics should use a higher index of suspicion for CVA/Stroke when presented with patients who exhibit atypical signs and symptoms such as unconsciousness, altered mental status, general weakness, or dizziness/headache; as these are the most common presentations that may confound the identification of CVA/Stroke in the pre-hospital environment. Paramedics may also benefit from required continuing education units (CEUs) in the area of CVA/Stroke.