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# A Real World Experience of the FAST-ED Based Pre-Hospital Stroke Triage System to Detect Large Vessel Occlusions

Ned Shashoua
*Baptist Health Neuroscience Center*, neddavid12@gmail.com

Amy Starosciak
*Baptist Health South Florida*, amyst@baptisthealth.net

Jayme Strauss
*Baptist Hospital of Miami; Baptist Neuroscience Center*, jaymes@baptisthealth.net

Felipe De Los Rios La Rosa
*Baptist Hopsital of Miami; Baptist Neuroscience Center*, felipedl@baptisthealth.net

Baptist Health Neuroscience Center
BAPTIST HEALTH SOUTH FLORIDA

# A Real World Experience of the FAST-ED Based Pre-Hospital Stroke Triage System to Detect Large Vessel Occlusions

Ned Shashoua, BA, Amy K. Starosciak, Ph.D, Jayme Strauss, MSN, RN, Felipe De Los Rios La Rosa, M.D.

American Heart Association American Stroke Association
The Joint Commission Certification Disease-Specific Care
American Heart Association American Stroke Association CERTIFICATION
Meets standards for Comprehensive Stroke Center

## INTRODUCTION

In March 2017, the Fire Officers Association of Miami-Dade (FOAMD) employed the Field Assessment Stroke Triage for Emergency Destination (FAST-ED) scale to better identify large vessel occlusion (LVO) strokes. Cases with a score ≥4 bypass other centers for a comprehensive center, and those ≥6 also have the interventional team activated from the field. The FAST-ED scale was developed using a retrospective set of ischemic strokes and TIAs. There have been no prospective, real world examples on FAST-ED performance when used in the field by emergency personnel.

| Item | FAST-ED | NIHSS |
|---|---|---|
| **Facial Palsy** | | |
| Normal or minor paralysis | 0 | 0-1 |
| Partial or complete paralysis | 1 | 2-3 |
| **Speech Changes** | | |
| Absent | 0 | 0 |
| Mild to moderate | 1 | 1 |
| Severe, global aphasia, mute | 2 | 2-3 |
| **Arm Weakness** | | |
| No drift | 0 | 0 |
| Limited drift, some resistance against gravity | 1 | 1-2 |
| No effort against gravity, absence of movement | 2 | 3-4 |
| **Denial/Neglect** | | |
| Absent | 0 | 0 |
| Extinction to bilateral simultaneous stimulation in one sensory modality | 1 | 1 |
| Unable to recognize own hand, exclusively orients to only one side of the body | 2 | 2 |
| **Eye Deviation** | | |
| Absent | 0 | 0 |
| Partial | 1 | 1 |
| Forced deviation | 2 | 2 |

*Table 1.* FAST-ED Scale and Correspondence to NIHSS

## METHODS

Stroke alert cases brought to our center by FOAMD during March 2017-August 2018 were analyzed. We used the FAST-ED score from the EMS run sheet and examined the incidence of LVOs and treatment rates for applicable cases. Cases without FAST-ED scores were excluded. An LVO was present if there was evidence of an occlusion of the internal carotid artery, middle cerebral artery (M1 or M2 segments), or basilar artery on initial imaging.


*Figure 1.* Number of Cases Reviewed

## RESULTS

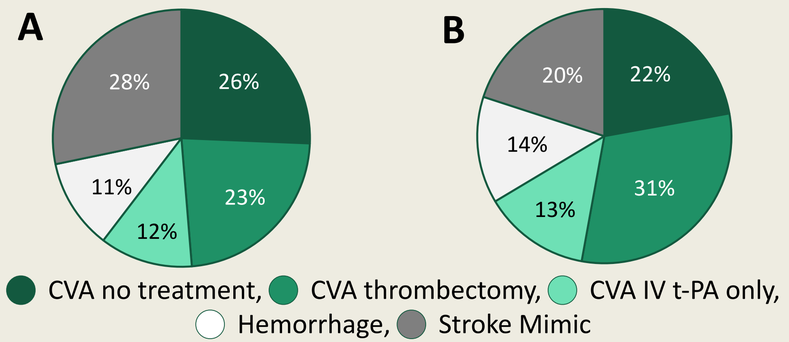


*Figure 2.* Stroke Types for FAST-ED ≥ 4 (A) and ≥ 6 (B)

- FAST-ED score ≥ 4 (Fig. 2A)
  - 60% were ischemic, 31% had an LVO
  - 23% were treated with mechanical reperfusion
- FAST-ED score ≥ 6 (Fig. 2B)
  - 66% were ischemic, 38% had an LVO
  - 31% were treated with mechanical reperfusion

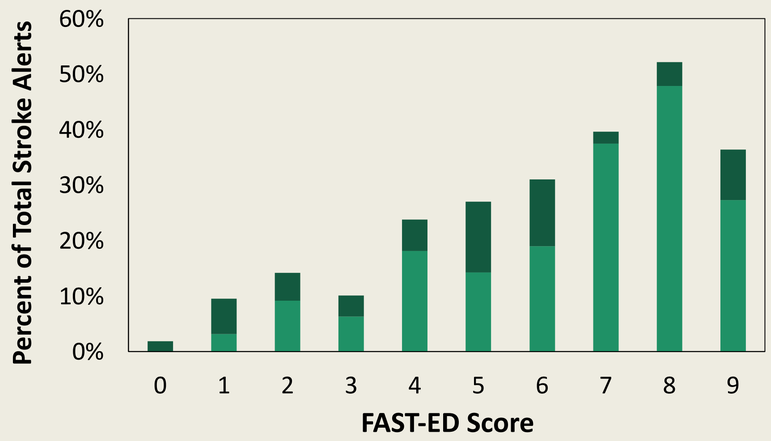


*Figure 3.* Percent of LVOs **With** and **Without** MR Interventions of All Stroke Alerts per FAST-ED Score

## CONCLUSIONS

- FAST-ED scores completed in the field yielded much lower LVO detection rates compared to the original report
- Likely due to inclusion of hemorrhages and stroke mimics from the field
- Only 1/3 of field activations led to an endovascular procedure
- Improved tools are required to identify stroke patients in the field with possible LVOs to minimize unnecessary interventionist field activations and provide appropriate destination triage

## DISCLOSURES

None.

## REFERENCES

1. Lima FO, Silva GS, Furie KL, et al. Stroke, 2016.