

**0-015** DIRECT FROM THE FIELD BYPASS TO CSC IMPROVES TIMELINESS AND LIKELIHOOD OF THROMBECTOMY FOR PATIENTS WITH EMERGENT LARGE VESSEL OCCLUSION

<sup>1</sup>T Sivapatham\*, <sup>1</sup>M Ciechanowski, <sup>2</sup>R Rosenbaum, <sup>2</sup>M Dworkin, <sup>2</sup>S Kappers. <sup>1</sup>ChristianaCare, Newark, DE; <sup>2</sup>Office of Emergency Medical Services, DHSS Division of Public Health, Smyrna, DE

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**Introduction** The impact of timeliness of revascularization on outcomes for patients presenting with acute LVO stroke is undeniable. The Delaware Stroke System (DSS) is comprised of 6 PSCs throughout the state, and a single CSC (also the closest CSC/TSC to all DE hospitals). Ground transport times to the CSC can reach up to 85 minutes for the furthest PSC when unable to fly. In conjunction with state average door-in-door-out times that approach nearly 2 hours, this can result in significant delays to revascularization for the most critically ill LVO stroke patients. Historically, only 52% of LVO patients transferred to the CSC underwent thrombectomy (FY22), with the most common reason for no thrombectomy being completed infarct on arrival to the CSC due to prolonged transport times.

**Methods** The DSS, comprised of representatives from all DE hospitals, DPH, and EMS, came together to improve the in-field evaluation and routing of stroke patients with possible LVO to optimize timeliness of revascularization therapy. In Spring 2022, the DSS decided upon the VAN score for EMS in-field evaluation for LVO (changed from RACE score due to suboptimal completion rates in the field). The DSS concurrently worked with the state EMS Medical Director to implement changes to the EMS Standing Order with respect to in-field evaluation and routing, allowing EMS to bypass the closest PSC in lieu of direct transport to the CSC for suspected LVO patients when able to fly (after contacting local ED physician/med control). These changes were approved by the DE Board of Medical Licensure and Discipline during Summer 2022. EMS education was completed in October 2022, including direct education to every prehospital paramedic by the state EMS Medical Director. The process went live in November 2022. Data was collected and analyzed to assess the volume of direct transfers from the field to the CSC, as well as their diagnosis and thrombectomy rates.

**Results** During the first full year of implementation (CY23), a total of 100 patients were flown directly from the field throughout DE to the CSC, bypassing the local PSC. Of these patients, 57% had a final diagnosis of stroke (AIS/ICH/SAH). 44% had AIS, and 17% received IV thrombolytics (39% of AIS patients). 29% had LVO (66% of patients with final diagnosis of AIS) and 23/29 (79%) underwent thrombectomy.

**Conclusion** By implementing an evidence-based LVO screening tool for EMS use in the field and routing for suspected LVO patients directly to a CSC by air, bypassing the local PSC, the DSS was able to improve the likelihood of thrombectomy for LVO patients throughout the state to 79% compared to a historical baseline of 52% when those patients arrived as interfacility transfers. These patients also received thrombectomy an estimated 2–3 hours earlier than if they had presented to the local PSC first. We are working to improve the utilization of the field screening tool to minimize unnecessary transfers, keep more patients at their local PSC when appropriate, while

still optimizing delivery of mechanical thrombectomy to LVO patients throughout our state.

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**0-016** COMPARING VALIDATED STROKE SCREENING SCALES FOR IDENTIFYING LARGE- AND MEDIUM-VESSEL OCCLUSIONS: A PROSPECTIVE, OBSERVATIONAL COHORT STUDY

S Kothari\*, R Morsi, A Baskaran, N Sehgal, O Metman, H Desai, S Thind, A Chahine, J Zakaria, L Karar, J Penagos, J Siegler, E Coleman, S Mendelson, J Brorson, S Prabhakaran, T Kass-Hout. *Neurology, University of Chicago Medical Center, Chicago, IL*

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**Introduction/Purpose** Rapid pre-hospital identification of acute ischemic stroke secondary to large-vessel occlusions (AIS-LVO) has proven to be successful in interhospital transfers and triaging patients. Although there are multiple stroke screening scales available, their utilization varies significantly across diverse settings. This study aims to compare the diagnostic validity of 8 different stroke screening scales in screening for AIS-LVO and AIS secondary to medium-vessel occlusions (AIS-MeVO).

**Materials and Methods** We prospectively analyzed all stroke alert activations at a single tertiary academic center between January 2022 and December 2023. We prospectively applied 8 stroke screening scales (BE-FAST, LAMS, PASS, FAST-ED, EMS RACE, 3-ISS, VAN, and NIHSS) to each stroke alert in both the emergency department and inpatient settings. The final diagnosis was classified as AIS-LVO or AIS-MeVO, AIS without LVO or MeVO, intracranial hemorrhage, transient ischemic attack, and stroke mimic.

**Results** Of 221 patients where all 8 stroke screening scales were performed, 199 patients were ultimately examined to compare pre-hospital validated anterior circulation LVO scales in the emergency department (ED) and in-hospital settings for both large- and medium-vessel occlusions. The mean age was  $63.8 \pm 15.2$  years, 62.3% were female (n=124), and 84.4% were African American/Black (n=168). The LAMS scale had the highest performance (AUC: 0.750 [95% CI: 0.668 to 0.831]), closely followed by the FAST-ED (AUC: 0.736 [95% CI: 0.649 to 0.822]), and VAN (AUC: 0.735 [95% CI: 0.651 to 0.818]) scales. Cutoff points selected from coordinates of the ROC curves for these scales were 3, 3, and a positive VAN.

**Conclusion** This is the first, prospective cohort study comparing the performance of 8 different screening scales among stroke alerts in the ED and inpatient settings for the detection of both AIS-LVO and AIS-Me \*, VO. We found LAMS to be the most sensitive tool for detection of AIS-LVO and AIS-MeVO, followed by FAST-ED and VAN.

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