

## **Abstract: Clinical Cerebrovascular Disease & Administrative Datasets for Trends in Stroke Disparities & Treatment**

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### **Disparities in the Use of Intravenous t-PA among Ischemic Stroke Patients:**

#### **Population-based Recent Temporal Trends**

**Faysel MA, Singer J, Cummings C, Stefanov DG, Levine SR:**

**J Stroke Cerebrovasc Dis 2019;28:1243-51**

- A 5-year comparison of disparities in IV t-PA use among acute ischemic stroke (AIS) pts based on race, gender, age, ethnic origin, hospital status, & geographic location.
- Extracted pts' demographic information & hospital characteristics for 2010 & 2014 from the NY Statewide Planning and Research Cooperative System (SPARCS).
- We compared disparities in IV t-PA use among AIS patients in 2010 to that in 2014 to estimate temporal trends. Multiple logistic regression was performed to compare disparities based on demographic variables, hospital designation, & geographic location.
- Overall, ~ 2% increase in IV t-PA from 2010 to 2014. Blacks were 15% less likely to receive IV t-PA compared to Whites in 2014, but in 2010, there was no difference. Pts aged 62-73 had lower odds of receiving IV t-PA than age group  $\leq 61$  in both 2010 and 2014. Gender, ethnic origin, & insurance status were not associated with IV t-PA utilization in both 2010 & 2014.
- Overall IV t-PA utilization among AIS patients increased between 2010 & 2014. However, there are evident disparities in IV t-PA use based on patient's race, age, hospital geography, and stroke designation status.

### **Ischemic Stroke Predictors in Patients Presenting with Dizziness, Imbalance, and Vertigo**

**Kim Y, Faysel M, Balucani C, Yu D, Gilles N, Levine SR:**

**J Stroke Cerebrovasc Dis 2018;27:3419-24**

- We identified predictors of acute ischemic stroke (AIS) among pts presenting to the ED with dizziness, imbalance, or vertigo (DIV) based on demographic & clinical characteristics.
- Pts admitted to the hospital after presenting to the ED with DIV from the NY Statewide Planning and Research Cooperative System (SPARCS) database from 2010 to 2014. Demographic & clinical characteristics were systematically collected. Multivariable logistic regression was used to determine predictors of a discharge diagnosis of AIS. Among 77,993 pts with DIV, 3,857 (4.9%) had a discharge dx of AIS. Admission presentation of imbalance, African-American race, history of hypertension, DM, hypercholesterolemia, tobacco use, AFIB, and prior AIS due to extracranial artery atherosclerosis were each positively associated with an AIS dx independently.
- Multiple potential positive & negative predictive AIS risk factors were identified. Combining with currently available centrally-caused dizziness prediction tools, these newly identified factors could provide more accurate AIS risk stratifying method for DIV patients.

### **Developing a User-centered Mobile Application for Stroke Caregivers:**

#### **A Pilot National Survey**

**Singera J, Weingast S, Gilles N, Faysel M, Stefanov DG, Girouard S, Conigliaro A, Fraser White M,**

**Jensen A, Burton D, Levine SR: Journal MTM 2018;7;2:35-45**

- Inadequate support, along with the stroke pt's level of disability, can have a negative impact on informal caregivers' quality of life/well-being. There is a lack of research & interventions focused on improving health & well-being of informal caregivers.
- We determined the most salient potential resources & features for stroke pt caregivers regarding the use of mobile apps to improve caregiver's health. A nationwide survey of caregivers was mailed to stroke survivors through the National Stroke Association, which included questions on demographics, cell phone/smartphone ownership, and caregiver's opinion about mobile app resources— specifically 1)

- scheduling multiple tasks, 2) finding resource information, 3) finding local resources, 4) tracking fitness & diet, & 5) communication with the stroke survivor.
- 396 stroke caregivers [(299 (76%) F, 96 (24%) African-American, 42 (11%) Hispanic/Latino, & 210 (53%) Caucasian], aged 20-99 yrs (mean 58.2 ± 11.3), returned surveys; 96% owned a cell phone & 60% owned a smartphone. Most caregivers reported aspects of the app to be useful, including, doctor/rehab appts [80% (95% CI 76-84%)], links to reliable medical info [84% (95% CI 80-87%)], local stroke support groups [81% (95% CI 77-85%)], exercises [76% (95% CI 71-80%)], & touch screen with useful phrases [76% (95% CI 71-80%)].
  - Latino (88%-74%) & African-American (84%-77%) caregivers reported the highest rate of usefulness. Implementation of a mobile app unique to stroke caregivers with multiple resources is desired by this diverse, national sample of informal caregivers. Such a mobile app holds potential to reduce the disparities gap for resource use.

### **Ongoing/Pending Research Collaborations**

Afable A, Faysel M, Jumbo A, Weedon J, Kaufman D, Levine SR

- 1 R21 MD017394-01: A Randomized Pilot Trial of a Digital Health Platform To Control BP To Address Stroke Disparities
- SUNY Seed grant: Discontinuity of Stroke Care in a Predominantly Black Urban Cohort: Leveraging EHR Data Mining to Trace Stroke Patient Trajectories
- Clinical Trial networks:

SUNY NeuroNEXT, StrokeNET, SIREN