Association Between Race, Ethnicity, and Sex with Prehospital Identification and Outcomes of Patients with Stroke

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Background

- Stroke remains a leading cause of death in the United States.
- White patients have higher EMS usage and are more likely to receive definitive treatment than African-American, Hispanic, or Asian patients.
- Women are less likely to be classified as stroke patients by EMS.
- Highest projected increase in stroke patients by 2030 is in the White Hispanic male population.

Objective

- Determine the association between race, ethnicity, and sex and the rate of prehospital stroke identification and patient outcomes.

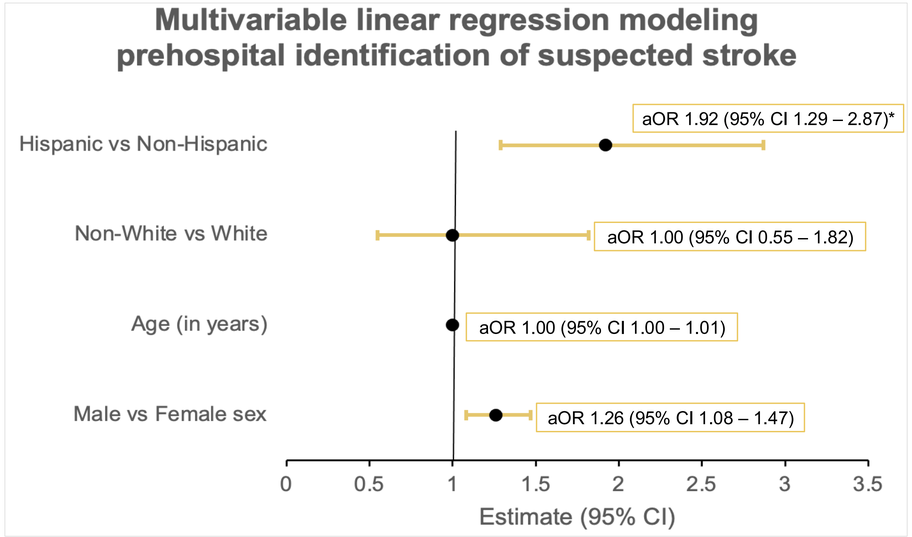
Methods

- Retrospective cohort of EMS encounters between January 1, 2020, to December 31, 2022
  - Data from 70 EMS agencies and 30 hospitals in two states
- Inclusion criteria:
  - Adult patients (≥18 years old)
  - Final diagnosis of stroke or TIA
- Multivariable regression modeled: prehospital identification of suspected stroke based on patient characteristics and discharge disposition

References

Results

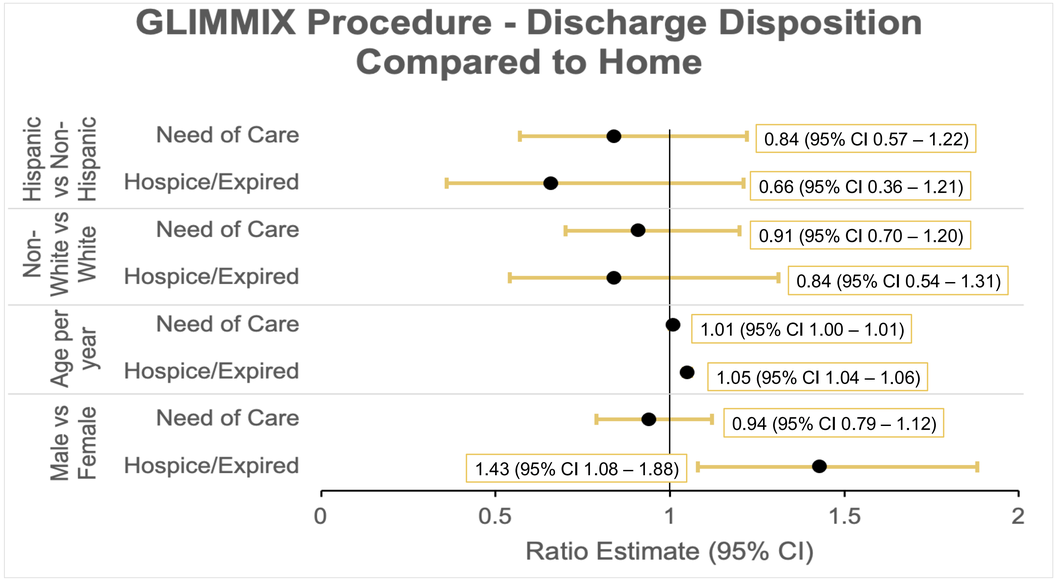
Prehospital Identification of Suspected Stroke



Adjusting for covariates

* Did not reach significance in GEE analysis (p=0.109)

Discharge Disposition



Demographics

		Prehospital Suspicion Stroke 3,749 (83.5%)	No Prehospital Suspicion Stroke 739 (16.5%)
Sex	Female	1,879 (50.1%)	361 (48.8%)
Age – median (IQR)		75 (65, 84)	69 (58, 80)
Race	White	2,451 (65.4%)	545 (73.7%)
	Black	168 (4.5%)	94 (12.7%)
	Asian	56 (1.5%)	22 (3.0%)
	Other/UTD	1,074 (27.6%)	78 (15.7%)
Ethnicity	Hispanic	211 (5.6%)	87 (11.8%)
	Non-Hispanic	3,538 (94.4%)	649 (87.8)
	UTD	0 (0%)	3 (0.4%)

Conclusions

- Male patients and Hispanic patients were more likely to be recognized as stroke by prehospital providers.
- Male patients had higher odds of being discharged to death or hospice compared to female patients.
- Despite the increased likelihood of prehospital stroke detection, male sex was associated with worse discharge disposition.

Future Directions

- Assess disparities in prehospital care based on individual races (beyond White and non-White).
- Determine replicability in larger sample across multiple states.
- Determine possible causes of the worse discharge disposition in male patients, despite their increased likelihood of stroke detection in the prehospital setting.

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- The other authors report that there are no competing interests to declare.

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