

2019 GEORGIA STROKE CONFERENCE

Pre-hospital Stroke Identification and Its Impact on In-hospital Care

Georgia Coverdell Acute Stroke Registry

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Benefits of EMS Activation

- Treatment begins immediately
- Activation of receiving hospitals
– diversion
- Efficient use of time



Benefits of EMS Activation

- Hospital arrival is faster
 - Median onset-to-hospital arrival time (minutes)
 - EMS Transported **125** (IQR: 60, 388)
 - Private Transport **215** (IQR: 77, 562)
- Shortens time for in-hospital care processes
 - Median door-to-imaging time (minutes)
 - EMS Transported **30** (IQR: 12, 75)
 - Private Transport **58** (IQR: 25, 114)



AHA's Guideline for Early Management Acute Ischemic Stroke

- EMS should use prehospital stroke assessment tools
- EMS should begin the initial management of stroke in the field
- EMS should provide prehospital notification to the receiving hospital

Stroke. 2013;44:870–947



Impact of Pre-hospital Stroke Identification and Documentation on In-patient Care Process, Georgia 2016

- Median door-to-imaging time (minutes)
 - Private Transport **58** (IQR: 25, 114)
 - EMS Transported **30** (IQR: 12, 75)
 - Identified Patients **13** (IQR: 6, 31)
 - Not-identified patients **51** (IQR: 22, 102)
- Door-to-imaging time < 25 minutes
 - Identified Patients (=2,111) **69.1%**
 - Not-identified patients (n= 909) **28.9%**

Impact of Pre-hospital Stroke Identification and Documentation on In-patient Care Process, Georgia 2016

Ischemic stroke patients identified and documented as having stroke by medics had

→ **3.78** times higher odds
(95%CI: 3.01-4.75)

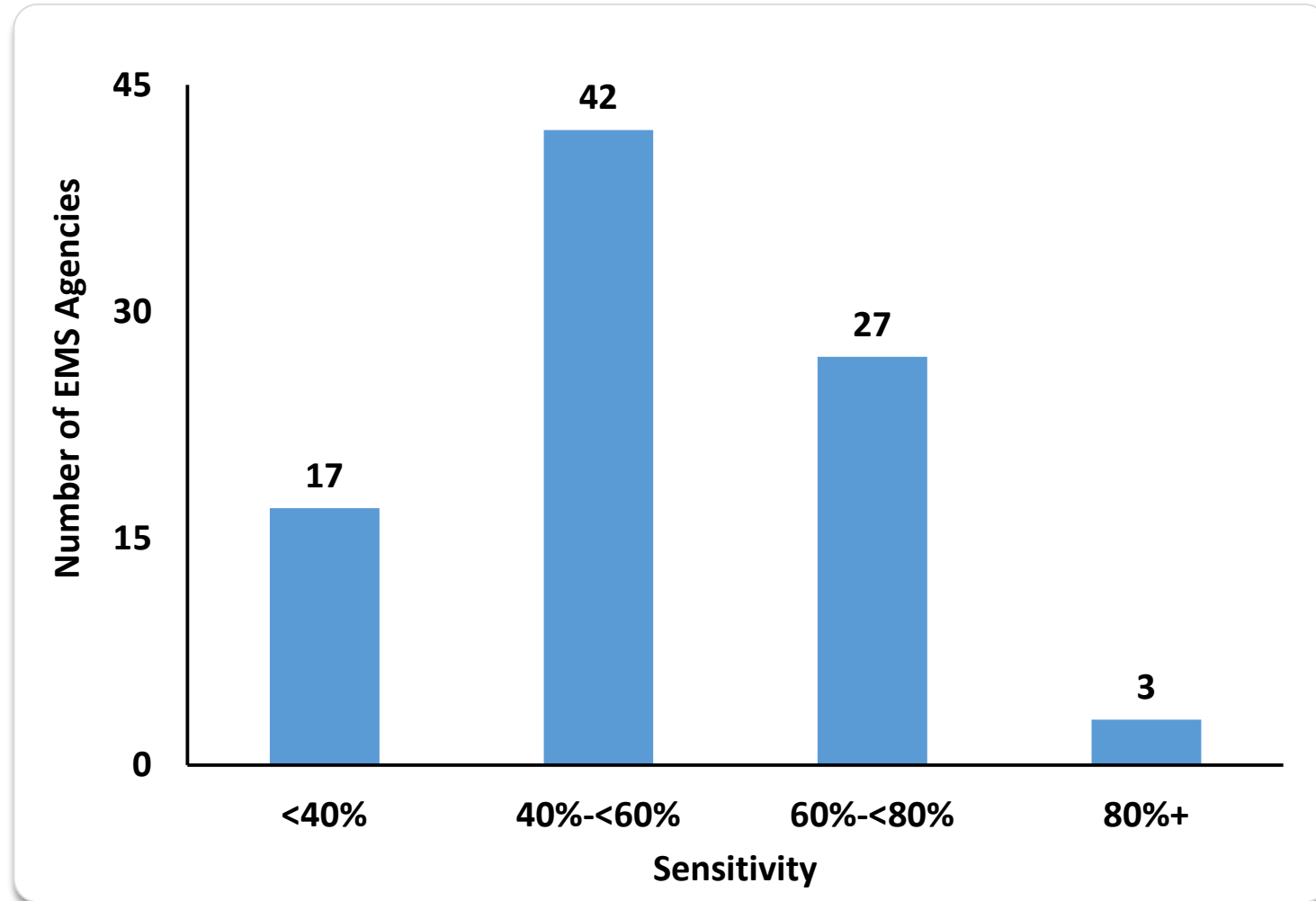
of ***receiving imaging within 25 minutes*** of hospital arrival than those who were not documented as having stroke



EMS Sensitivity in Detecting and Documenting Acute Stroke or Transient Ischemic Attack

- The GCASR and the GEMSYS 2016 data were linked.
 - ➔ 6,631 records
- Sensitivity in identifying & documenting acute stroke
 - Medics - **48.6%**
 - EMDs - **40.1%**

Distribution of EMS Agencies by Level of Medics' Sensitivity, Georgia 2016



Top 10 First Provider Impressions Among Ischemic Stroke Patients Not-identified by Medics, Georgia 2016

First Provider Impression	Frequency	Percent
AMS/ALOC/Unconscious	634	27.0
Weakness	609	25.9
Other Illness/Injury	213	9.1
General Malaise	96	4.1
Pain	76	3.2
Hypertension	67	2.9
Syncope/Fainting	66	2.8
Traumatic Injury	61	2.6
Nausea/Vomiting (Unknown Etiology)	58	2.5
Headache	53	2.3

SAMPLE ANALYSES

Stroke-related Signs Reported in the Narrative by Medics, Georgia 2016

Objective finding	Ischemic Stroke Patients	
	Identified by EMS (N=100)	Not Identified by EMS (N=100)
Conscious, alert and oriented to place, person and time	50%	41%
Weak or paralytic arm or leg	64%	23%
Aphasia or slurred speech	53%	22%
Face drooping	56%	16%
Calculated PCSS score		
0	12%	65%
1	27%	19%
2	41%	9%
3	20%	7%
Stroke screening mentioned	38%	19%

Discussion

- Adhere to AHA guideline
 - Use prehospital stroke assessment tools
 - CPSS > 0 → ~ 72% sensitivity*
- Interpret stroke scale score properly
 - Increases sensitivity from 50.5% to 67.8%
- Improve documentation
 - Stroke screening
 - Provider impression

* *Ann Emerg Med.* 1999;33(4):373-8.

Discussion

- If you think it is stroke,
then **call it STROKE**
- Priority in provider impression?
 - AMS or Weakness
vs.
Stroke

Questions?

Thank YOU!