

Implementation of A Regional Protocol for Identification and Notification of Stroke Patients

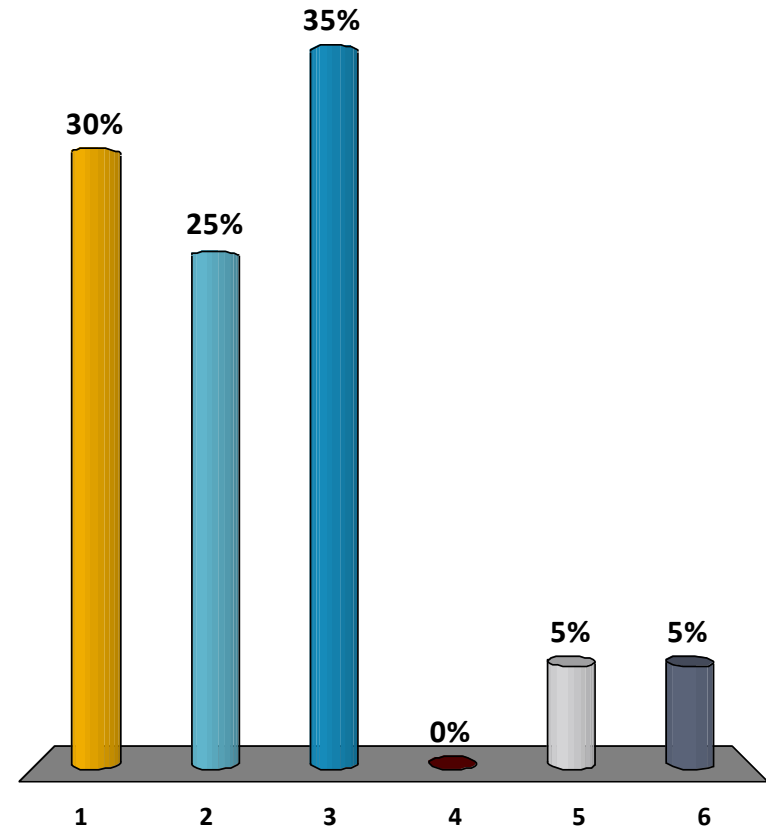
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Presenter Disclosure Information

- Rick Petrie, EMT-P
 - Implementation of A Regional Protocol for Identification and Notification of Stroke Patients
- Financial Disclosure:
 - No relevant financial relationship exists.

Audience Breakdown

1. EMS
2. RN
3. Physician
4. Mid-Level Practitioner
5. Administrator
6. Other



Atlantic Partners EMS

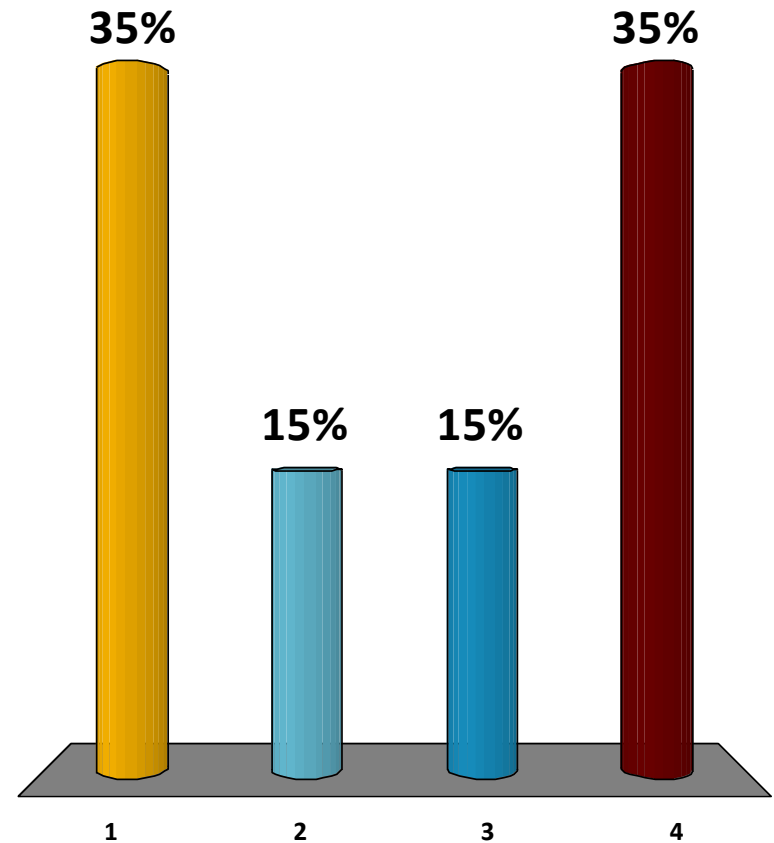
- Originally Northeast EMS & Kennebec Valley EMS
 - 6 Counties; 15,587 Square Miles; 398,000 people
 - 16 Hospitals, 1 Tertiary Care Facility
 - 125 EMS Services; 70% ish volunteer
- Now added MidCoast EMS
 - 9 Counties, 17,142 square miles, 505,000 people
 - 20 Hospitals, 1 Tertiary Care Facility
 - 148 EMS Services
- Representing 3 of Maine's 6 Regions

Barriers to Implementation

- Large Geographic Area
- Difficulty in reaching audience (EMS, Hospital)
- Hospital Buy-In
- EMS Buy-In
- Consistent Protocol application
- Only a handful of hospitals with in-house CT scan capabilities 24/7

What do you think was the greatest barrier to implementation?

1. Geographic Considerations
2. Consistent Application of Protocol
3. EMS Buy-In
- ✓ 4. Hospital Buy-in



Hospital Buy-In

- Embolic Stroke experience with the hospitals in the catchment area of our Tertiary Care facility
 - 1% of patients identified as potentially meeting the criteria received lytics.
 - EMMC contacted the Hospitals and guaranteed that they would accept all patients post-lytic administration for follow-up care/monitoring
 - Participation tripled..... to 3%

Implementation Plan

- Develop the protocol
 - Simple is better
 - No real new information for EMS providers on stroke recognition
- Get Hospital Buy-In
 - Sub-Regional QI System
- Conduct the Education Sessions
- Mail out written protocol with implementation date

Prehospital Therapy of Acute Stroke

#1 Identify

- Cincinnati Prehospital Stroke Scale
- Determine “time last seen normal”
- Rule out hypoglycemia
- Notify the hospital as soon as the diagnosis is made

Strategy

- Identify stroke in the prehospital environment
- Notify receiving hospital ASAP
- Hospital
 - Activate internal processes
 - Stat head CT
 - Labs
 - Timely thrombolytics
 - Divert patients if CT not available

Strategy

- Only one way this will work
 - The ED has to trust EMS presumptive diagnosis
 - The hospital must respond to the EMS notification
- Collaborative protocol creates trust
 - You have to follow it 100%
- Expect and plan over-triage

Hospital Notification

- Notify as soon as possible
- “This is XYZ EMS. We are transporting a XX age XX (gender) patient who is exhibiting signs of stroke. Last time patient presented as normal was XX. Cincinnati Prehospital Stroke Scale is abnormal for XX of 3 elements (List Findings). The patient’s mental status is XX. Blood glucose is XX. Vitals signs are XX. ETA is XX. Do you have any further questions or orders?”

Documentation

- **Stroke Assessment Checklist**
 - ***Notify ED as soon as stroke symptoms confirmed***

- Time Last Normal: _____
- Name/Number for witness time last normal:

- **Cincinnati Stroke Scale**

- 1. Speech; "You can't teach an old dog new tricks"
 - ___ Normal ___ Abnormal
- 2. Facial Droop; "Have the pt. smile or show their teeth"
 - ___ Normal ___ Abnormal
- 3. Motor; "have pt close eyes and extend arms"
 - ___ Normal ___ Abnormal
- 4. Level of consciousness
 - ___ Normal ___ Abnormal
- 5. Blood Glucose _____

- **Stroke Checklist**

- | Yes | No | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | History of intracranial hemorrhage? |
| <input type="checkbox"/> | <input type="checkbox"/> | Known arteriovenous malformation, neoplasm, or aneurysm? |
| <input type="checkbox"/> | <input type="checkbox"/> | Witnessed seizure at stroke onset? |
| <input type="checkbox"/> | <input type="checkbox"/> | Active internal bleeding or acute trauma (fracture)? |
| <input type="checkbox"/> | <input type="checkbox"/> | Intracranial or intraspinal surgery, serious head trauma, or previous stroke within the past 3 months? |

Case 1

- 38 year old female with hemiplegia
 - Acute onset 1715 right hemiplegia, slurred speech, fall to the ground
 - EMS arrives 1742
 - Positive CPSS
 - BG = 110
 - VS: BP 156/72 RR 16 HR 72 SPO₂ 99%
 - Prehospital Code Stroke called

Case 1

- ED Arrival
 - 1810
 - Physical Exam
 - VS: BP 160/76 RR 16 HR 80 SPO₂ 99%
 - Persistent right hemiplegia, slurred speech
 - Labs
 - No remarkable findings
 - Head CT

Case 1



Case 1

- ED Course
 - Eligible for thrombolytic therapy
 - Treated with 54 mg (0.9 mg / kg) rt-PA
 - Resolution of symptoms begins within 15 minutes
- Hospital admission
 - Discharged neuro intact in 5 days

Special Thanks:

Chris Hogness, MD

Northwest Regional Stroke Network

