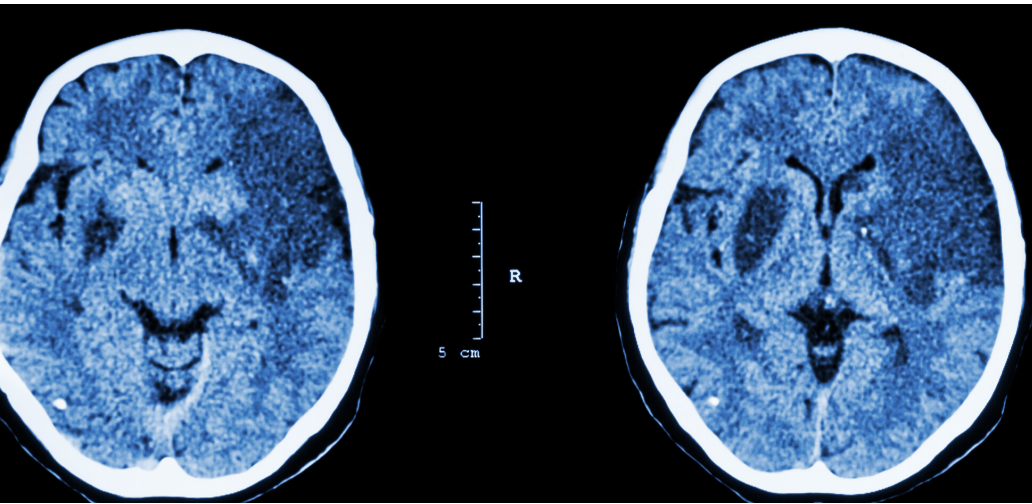


A publication from the Maine EMS Quality Improvement Committee

STROKE AND STROKE CARE



OVERVIEW

In 2017, cerebrovascular accidents were the fifth leading cause of death in the State of Maine with 736 deaths and a mortality rate of 37.5 deaths per 100,000 people.¹ It is critical that EMS clinicians are able to readily identify strokes within the field in order to successfully activate the complex response systems that are in place to provide treatment and care. In 2001, Congress funded the establishment of the Paul Coverdell National Acute Stroke Registry (now Paul Coverdell National Stroke Program) in memory of the late U.S. Senator Paul Coverdell of Georgia who suffered a fatal stroke. There are seven performance measures that pertain to Maine EMS: Duration of On-Scene Time; Glucose Measurement; Pre-Notification of Receiving Stroke Facility; Completion and Documentation of a Stroke Screening; Last Known Well Documentation; Documentation of Time of Discovery; and Completion of the Thrombolytic Checklist.²

1. National Center for Health Statistics -- CDC. (2019). Stroke Mortality by State. [online] Available at: https://www.cdc.gov/nchs/pressroom/sosmap/stroke_mortality/stroke.htm [Accessed 15 Jan. 2020].

2. Paul Coverdell National Acute Stroke Program Resource Guide. (2016). [online] Available at: <https://emsa.ca.gov/wp-content/uploads/sites/71/2019/02/USCDCP-Paul-Coverdell-Nation-Acute-Stroke-Prog-Resource-Guide-10-24-16.pdf> [Accessed 27 Jan. 2020].

TAKE AWAYS:

- Minimize on-scene time to 15 minutes or less
- Assess and treat conditions that mimic strokes by performing complete assessments on all patients with neurological deficits (i.e. hypoglycemia)
- Notification of the receiving hospital of a patient with stroke symptoms is vital to activate resources and expedite the delivery of definitive care
- Complete and document the FAST-ED Screening tool for all patients presenting with any neurological deficits
- Document the last known well and time of discovery in the patient care report because they are critical to determining eligibility for thrombolytic therapy

Quality improvement leaders should think about the following items:

- Are your providers spending more than 15 min on scene for stroke patients?
- Are your providers measuring BGL for suspected stroke patients?
- Are your providers notifying the receiving hospitals sufficiently?

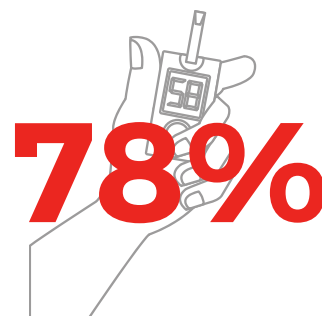
Time Spent On-Scene



A key metric that the Coverdell Stroke Program / American Stroke Association is focusing on is the amount of time EMS providers are remaining on scene with patients with suspected strokes, with a targeted scene time of less than 15 minutes.³ In 2019, the average on-scene time in Maine was 16 minutes and 32 seconds for transporting agencies. The data shows that 55% of calls involving a cerebrovascular accident took more than 15 minutes on scene. Minimizing on-scene time will help improve patient outcomes by getting the patient to definitive treatment as soon as possible.

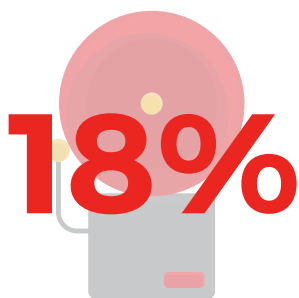
Obtaining and Documenting a Blood Glucose

Multiple guidance documents stress the importance of obtaining blood glucose levels in individuals exhibiting stroke-like symptoms. Hypoglycemia commonly can present with similar symptoms. Management of blood sugar levels can potentially resolve neurological deficits. In Maine, only 78% of patients with a suspected stroke have a documented blood sugar level. Hypoglycemia can mimic strokes with similar neurological deficits. Identification and treatment with glucose often resolves symptoms related to hypoglycemia.⁴



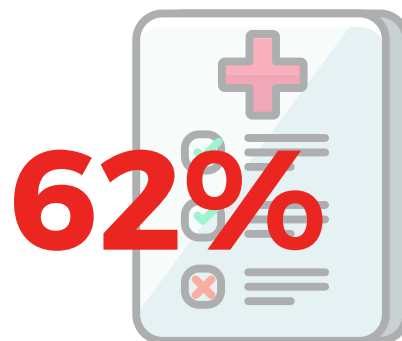
Documentation of Pre-Notification to Receiving Hospitals of Possible Stroke Patient

Maine EMS recently implemented on December 1, 2019 new rules within MEFIRS that *requires* a provider to document notification of the receiving hospital of a potential stroke patient. Providing early notification enables healthcare facilities to aggregate necessary resources to be able to rapidly assess and treat the patient upon arrival -- ultimately reducing the amount of time to definitive care. In 2019, when this was not a required field only 18% of the possible stroke patients had a recorded notification to the receiving hospital of a stroke patient.



Documentation of Out-of-Hospital Stroke Screening

Maine EMS recently implemented new rules within MEFIRS that will require that providers document FAST-ED scores for patients presenting with stroke symptoms. In 2019 prior to the implementation of the new MEFIRS rules, only 62% of the possible stroke patients had a recorded stroke screening assessment. Quality assurance leaders should encourage all providers to document all of their patient assessments appropriately.



3. Implementation strategies for emergency medical services within stroke systems of care: A policy statement from the American Heart Association/American Stroke Association expert panel on emergency medical services systems and the Stroke Council(2007)[online] Available at: https://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_301705.pdf [Accessed 27 Jan. 2020]

4. Paul Coverdell National Acute Stroke Program Resource Guide. (2016). [online] Available at: <https://ems.ca.gov/wp-content/uploads/sites/71/2019/02/USCDCP-Paul-Coverdell-Nation-Acute-Stroke-Prog-Resource-Guide-10-24-16.pdf> [Accessed 27 Jan. 2020].

Documentation of the Last Known Well Time and Time of Discovery



An integral component of assessing the stroke care system within the State of Maine will rely upon high quality documentation from EMS providers. Maine EMS recently has implemented new rules that have increased the number of required fields surrounding strokes including FAST-ED Screening documentation as well as last known well times.

In 2019, last known well times were documented 80% of the time within the MEFIRS reports. While there are circumstances when these times may not be available, it is critical that providers document it if it is available.

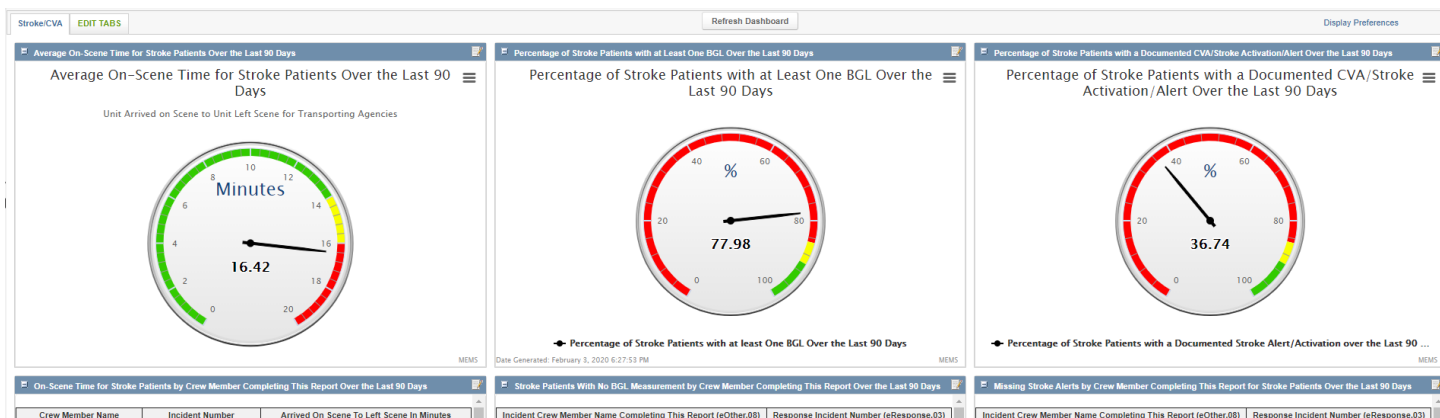
These times are vital for tertiary stroke care systems to make determinations regarding eligibility for thrombolytic therapy and/or interventional radiology options (i.e. thrombectomy).

In addition to the last known well time, it is also important to document the time of discovery for patients with suspected strokes. These times are equally important as the last known well time for determining eligibility for definitive care. In Maine, this time was only documented 83% of the time in suspected stroke patients reported within the Maine MEFIRS system.



How To See Your Own Data on Our New Stroke/CVA Dashboard

Maine EMS has created a new dashboard within the MEFIRS Report Writer tool called "Stroke/CVA." On this dashboard agencies and providers will be able to see three reports detailing the respective entity's performance with the EMS-related Coverdell measures over the last 90 days. The gauges allow agencies and providers to quickly determine their average on scene time, percentage of stroke patients receiving a blood glucose measurement, and the percentage of times a CVA/Stroke alert was documented in the patient care report for stroke patients. Below these gauges are drill down reports that allow continuous quality improvement (CQI) officers and providers to better understand and identify opportunities for improvement in the area of stroke care. If you click on the incident number hyperlink, it will take you directly to the call in question.



Additional Stroke Quality Improvement Resources in MEFIRS: Coverdell Stroke Performance Over the Last 90 Days



This report will provide you with a 90-day look back for all 911 stroke patients. The Report provides information on all the EMS-related Coverdell measures, and also includes the documentation of the FAST-ED Stroke Assessment. This report is available in Report Writer, by going to *Tools, Report Writer*, and searching for "Coverdell Stroke Performance Over the Last 90 Days."

Incident Number	Incident Date	Incident Crew Member Full Name List (eCrew.01)	Unit Arrived On Scene To Unit Left Scene In Minutes	Type Of Scene Delay List	Pre Arrival Alert Type	Pre-arrival Alert Activation Date Time	Initial Blood Glucose Level	Last Blood Glucose Level	Last Known Well Date Time	Stroke Scale Facial Droop	Stroke Arm Drift	Stroke Scale Speech	Vitals Stroke Scale Score (eVitals.29)	Stroke Scale Facial Palsy	Stroke Scale Arm weakness:	Stroke Scale Speech Changes:	Stroke Scale Eye Deviation:	Stroke Scale Denial/Neglect:	FAST-ED SCALE TOTAL:
Incident Crew Member Name Completing This Report (eOther.08):																			
8					Emergency Department	01/29/2020 22:00:00	122	122	01/29/2020 21:00:00	Abnormal	Abnormal	Abnormal	Positive						

Stroke CQI

Maine EMS has added a CQI Category titled "Coverdell Stroke Performance." This CQI category offers the opportunity for those responsible for the Quality Improvement process to see all the Stroke/CVA incidents in one list, with simple questions to answer regarding each incident, and an ability to provide feedback to the clinicians who provided care.

Notes on the Data:

The data included in this report is retrospective and originates from the 276 EMS agencies and the approximately 5,600 EMS providers in the state of Maine who provide data to the EMS Run Reporting system. This analysis includes 2,353 records of stroke patients that interacted with EMS as part of a 911 scene call or 911 intercept. This newsletter covers the months of January 1, 2019 to December 31, 2019.

Maine EMS QA/QI Committee

For more information on continuous quality improvement (CQI) and the tools within MEFIRS, feel free to attend a Maine EMS QA/QI Committee Meeting which are held on the third Wednesday of every month at 1:30 P.M. Meetings are held at the Maine EMS Office located at 45 Commerce Drive; Augusta, Maine 04333.

The Maine EMS Quality Improvement Committee is a standing committee of the Maine EMS Board and is comprised of 15 members representing the medical director's community, regions, EMS agencies, and at-large representatives. The Committee is focused on continuous quality improvement of the EMS system. As part of their charge, they review statewide, de-identified information to better understand a variety of topics affecting EMS including, but not limited to: naloxone administration, strokes, out-of-hospital cardiac arrest, airway management, and chest pain.

Disclaimer: The purpose of this newsletter is informational only and is not intended to be a comprehensive review of the entire EMS system, nor is it intended to be a scientific review. Rather, this is intended to offer a snapshot of the performance surrounding specific EMS run types.