



Coverdell Stroke EMS Performance Measures 2023

Foothills and Mile-High RETAC
Regional Medical Direction Program



What is the Paul Coverdell National Acute Stroke Program?

The Coverdell Stroke Program, established in 2001, is CDC program that focuses on improving stroke care in the U.S. Named after Senator Paul Coverdell, who died from a stroke. It aims to address the significant public health burden posed by strokes. A key part of the program is its emphasis on EMS performance measures.

These measures aim to enhance the timeliness and quality of acute stroke treatment by improving EMS protocols. This includes implementing protocols for identifying stroke symptoms in the field, minimizing scene time, initiating pre-hospital stroke assessments, and prioritizing rapid transport to stroke-ready facilities.

Through these efforts, the Coverdell Stroke Program aims to reduce delays in stroke treatment and improve outcomes for patients. By promoting standardized EMS practices and facilitating data collection and reporting, the program contributes to ongoing quality improvement initiatives in stroke care nationwide.

While Colorado is not a state that has received grant funds for this program, the program has established a national standard for evaluating the performance of stroke care. This report includes selected measures for the Foothills and Mile-High RETAC and a discussion on options to improve stroke care performance across the region.

Measure ID	Description
Coverdell-2	Glucose
Coverdell-3	Pre-notification
Coverdell-4	Stroke Screen
Coverdell-5	Last Known Well
Coverdell-8	Impression

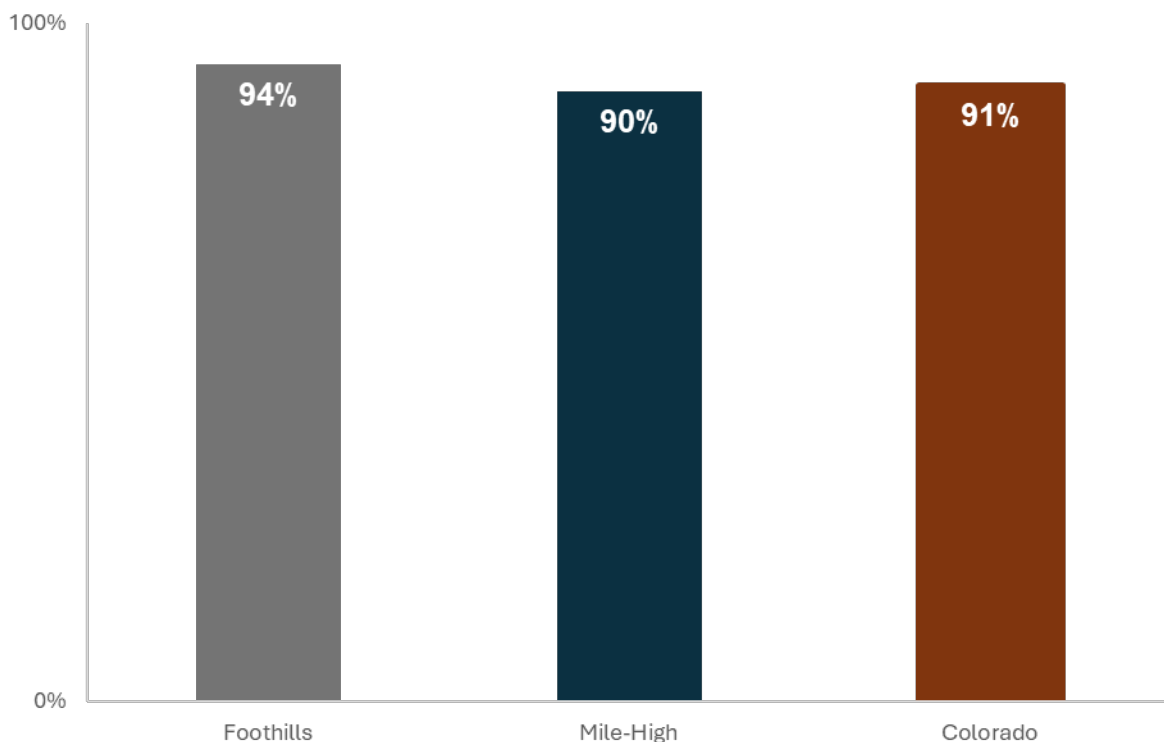
Data are provided by Colorado Department of Public Health and Environment (CDPHE) Emergency Medical and Trauma Services Data Section from the third-party biospatial platform for the date ranges of 1/1/2023 to 12/31/2023. Stroke is defined in biospatial if one or more of the following are true:

- Provider primary or secondary impression (eSituation.11, eSituation.12) indicate any of the following ICD-10-CM codes (sub-codes included): I60, I61, I63, G45, G46.3, G46.4.
- Stroke scale score (eVitals.29) indicates a positive stroke assessment.
- Protocols used (eProtocols.01) is 9914145: "Medical-Stroke/TIA".
- Destination Team Pre-Arrival Alert or Activation (eDisposition.24) is 4224015: "Yes - Stroke". Data is for trending purposes only and has not be verified for complete accuracy.

The Paul Coverdell National Acute Stroke Program Resource Guide can be found at this link: <https://emsa.ca.gov/wp-content/uploads/sites/71/2018/04/strokedocumentreliedupon.pdf>

Coverdell 2: Glucose

Blood glucose checked



Measure Score Interpretation:

For this measure, a higher score indicates better quality.

Measure Description:

Percentage of EMS responses originating from a 911 request for suspected-stroke transports where a blood glucose level was checked.

Measure Components:

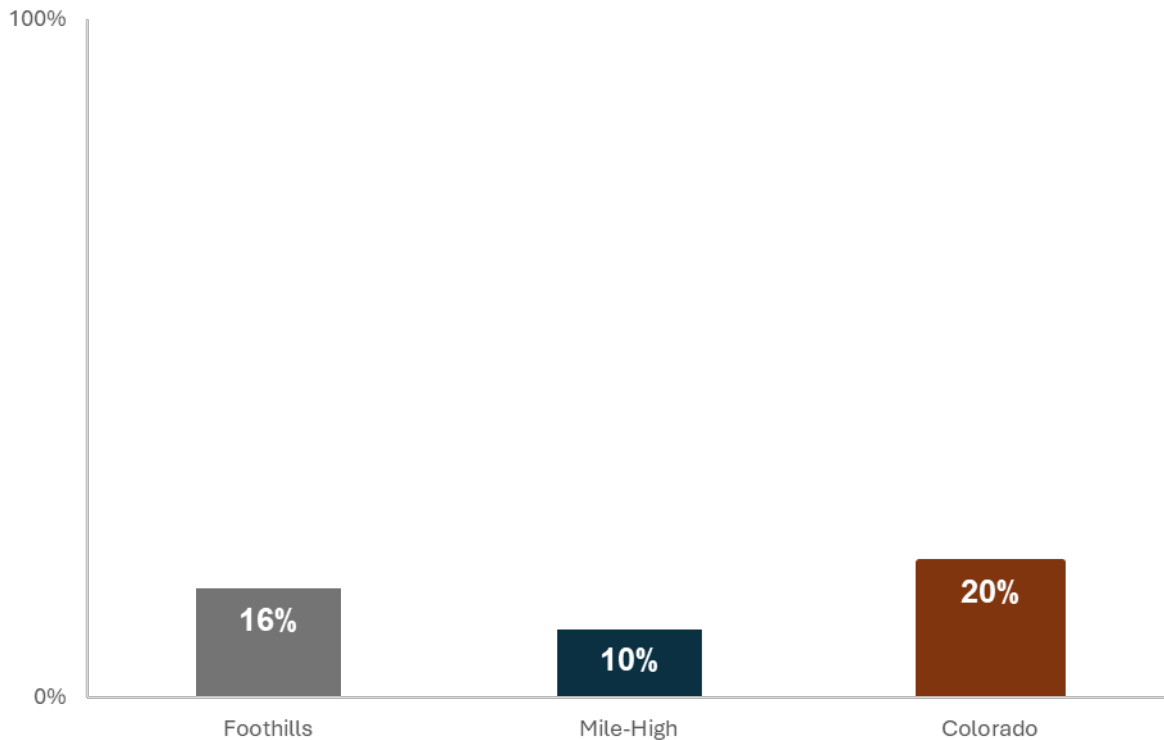
Numerator Statement	The patient's blood glucose level (eVitals.18) is documented with a valid value.
Denominator Statement	All EMS responses originating from an emergency response (911) for patients with a stroke event where patient contact was made and patient was transported. PCRs will be excluded if there are no documented blood glucose level (eVitals.18) AND a blood glucose measurement is a pertinent negative ("Refused" or "Unable to Complete").

Analysis and Recommendations:

Measurement and treatment of hypoglycemia (<60 mg/dl) is a strong recommendation from the AHA/ASA guidelines.ⁱ It is also an AHA Mission Lifeline EMS criteria (AHAEMS3).ⁱⁱ Hypoglycemia is found in some patients with stroke-like symptoms; administering glucose may resolve neurological deficits.

Coverdell 3: Pre-Notification

Stroke pre-notification alert called in by EMS



Measure Score Interpretation:

For this measure, a higher score indicates better quality.

Measure Description:

Percentage of EMS responses originating from a 911 request for suspected-stroke patient where EMS called a stroke alert pre-notification to the receiving facility.

Measure Components:

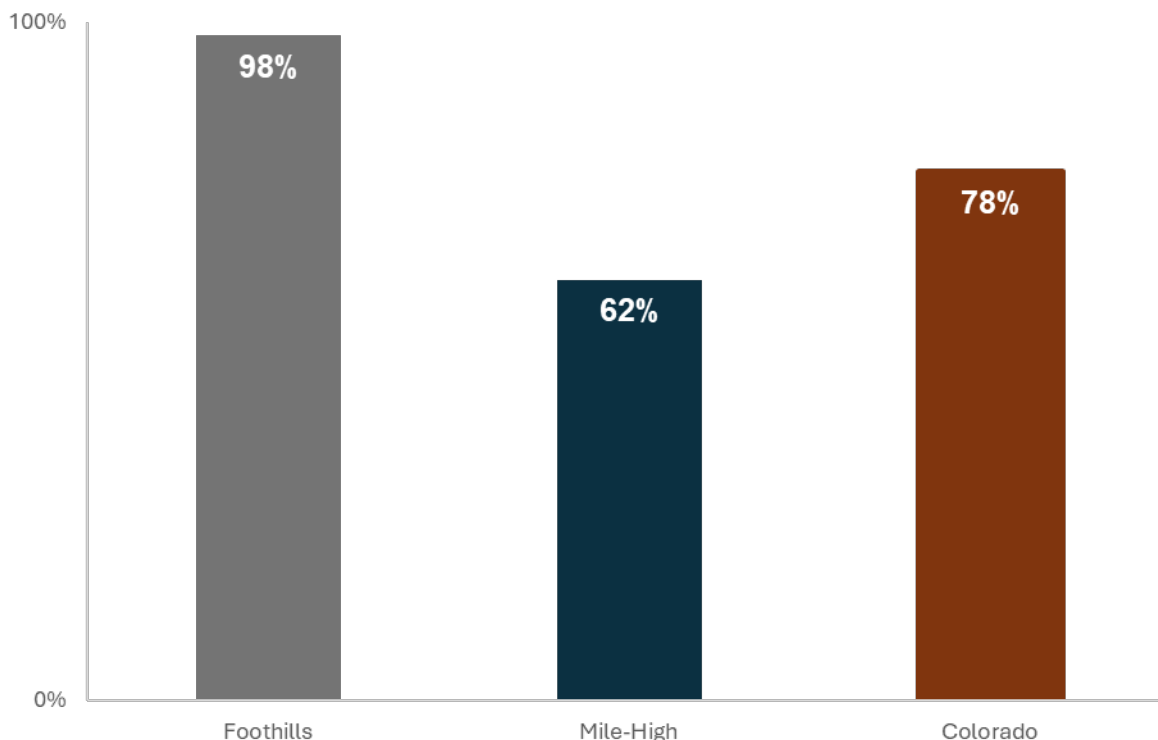
Numerator Statement	EMS responses originating from an emergency response (911) request for suspected-stroke patient where a destination team pre-arrival alert or activation indicates stroke team activation. Destination team pre-arrival alert or activation (eDisposition.24) equals stroke.
Denominator Statement	All EMS responses originating from an emergency response (911) for patients with a stroke event where patient contact was made and patient was transported.

Analysis and Recommendations:

Prenotification has a strong recommendation from the AHA/ASA guidelines.ⁱ It is also one of the AHA Mission Lifeline measures (AHAEMS).ⁱⁱ EMS prenotification was associated with increased likelihood of definitive treatment within recommended time parameters. This measure requires completion of Destination Team Pre-Arrival Alert or Activation (eDisposition.24) NEMSIS element. The Regional Medical Liaisons recognize these numbers do not reflect actual practice in the field. There is a significant opportunity for improvement in the region. This may be through streamlining process and/or improvement of documentation.

Coverdell 4: Screen

Stroke screen completed and recorded



Measure Score Interpretation:

For this measure, a higher score indicates better quality.

Measure Description:

Percentage of EMS responses originating from a 911 request for suspected-stroke patients who received a pre-hospital stroke screen

Measure Components:

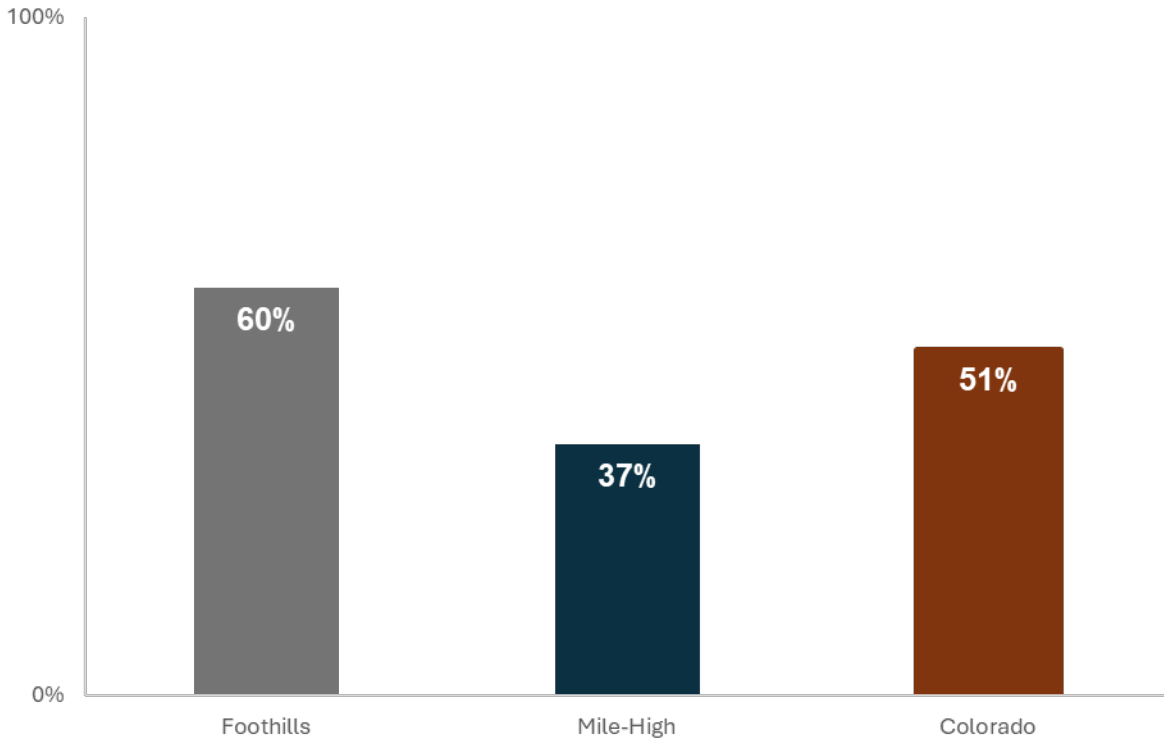
Numerator Statement	EMS responses originating from a 911 request for suspected-stroke patients who have a stroke score (eVitals.29) documented.
Denominator Statement	All EMS responses originating from an emergency response (911) for patients with a stroke event where patient contact was made and patient was transported. If there are no valid stroke scale result values, the record will be excluded if any stroke scale score (eVitals.29) is a pertinent negative ("Refused" or "Unable to Complete"), any level of responsiveness (AVPU) (eVitals.26) is not "Alert", or any total GCS (eVitals.23) is less than 15.

Analysis and Recommendations:

Use and documentation of a stroke screening assessment tool by 911 dispatch and EMS responders is a strong recommendation in the AHA/ASA guidelines.ⁱ It is also one of the AHA Mission Lifeline EMS measures.ⁱⁱ Use of a prehospital tool for stroke screening improves stroke identification, leading to early recognition, notification of receiving facility, and time to definitive treatment. The FRETAC has a 98% rate, however, MHRETAC agencies have a 62% rate indicating a need for system wide process or performance improvement. The Regional Medical Liaisons recognize these numbers do not reflect actual practice in the field of the MHRETAC. Agencies within the MHRETAC should review their current ePCR documentation standards to ensure this is being captured as eVitals.29 in a NEMSIS compliant program.

Coverdell 5: Last Known Well

Last known well time documented



Measure Score Interpretation:

For this measure, a higher score indicates better quality.

Measure Description:

Percentage of EMS responses originating from a 911 request for suspected stroke patient who had a last known well date/time documented.

Measure Components:

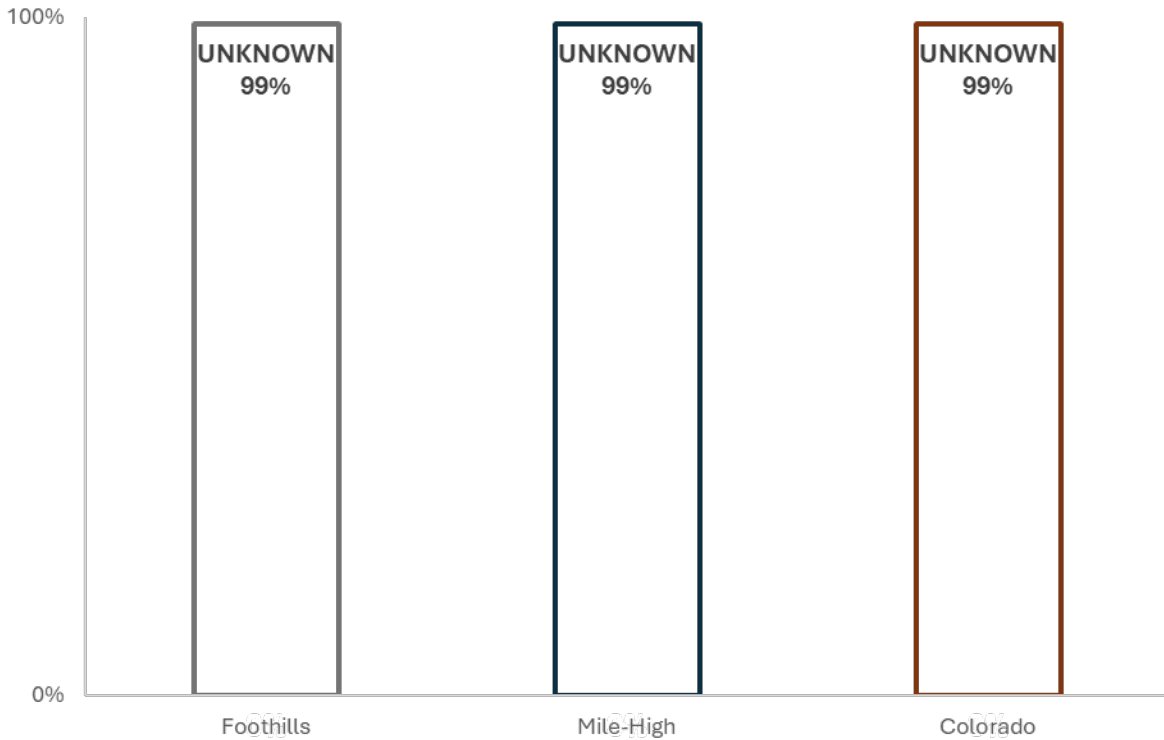
Numerator Statement	EMS responses originating from a 911 request for suspected-stroke patients who have a last known well date/time (eSituation.18) documented.
Denominator Statement	All EMS responses originating from an emergency response (911) for patients with a stroke event where patient contact was made and patient was transported.

Analysis and Recommendations:

Capturing and documenting the suspected stroke patient's last known well time is an AHA Mission Lifeline measure.ⁱⁱ The purpose of this measure is to assess EMS documentation of time last known to be well, without signs and symptoms of acute stroke. EMS providers are frequently the only professionals who have reliable access to this information. This information is crucial to determine next treatment steps, including eligibility for thrombolytic therapy. Agencies should review how they are capturing this in their ePCR system and verify it is documented in NEMESIS value eSituation.18.

Coverdell 8: Impression

EMS provider impression agrees with hospital diagnosis



Measure Score Interpretation:

For this measure, a higher score indicates better quality.

Measure Description:

Percentage of suspected-stroke transports where EMS provider impression agreed with hospital diagnosis.

Measure Components:

Numerator Statement	EMS responses originating from a 911 request for suspected-stroke patients who had the EMS provider impression that agreed with the hospital diagnosis.
Denominator Statement	All EMS responses originating from an emergency response (911) for patients with a stroke event where patient contact was made and patient was transported.

Analysis and Recommendations:

The purpose of this measure is to assess agreement between EMS suspected strokes and hospital confirmed strokes. This is important for EMS education to gain further knowledge on possible presentations of acute stroke and to make the best possible triage decisions and encourages feedback from facilities. Many agencies are currently receiving outcome data from facilities into the NEMSIS value Hospital Diagnosis eOutcome.13, however, this required information is not currently being transmitted to the state EMS repository. It is recommended that agencies who are receiving outcome data work with their vendors to transmit this information to the state. For those not currently receiving outcome data, contact your vendor for options and discuss this with your receiving facilities.

Appendix: PCR Counts by Measure

2023 Counts of PCRs by Measure	Foothills	Mile-High	Colorado
Coverdell 2: Glucose	1,428	3,997	11,475
Coverdell 3: Pre-notification	1,431	4,002	11,501
Coverdell 4: Screen	1,398	3,172	9,897
Coverdell 5: Last Known Well	1,431	4,002	11,501
Coverdell 8: Impression	1,431	4,002	11,501

ⁱ Powers, Willia J. "Guidelines for the Early Management of Patients with Acute Ischemic Stroke: 2019 Update to the 2018 Guidelines for the Early Management of Acute Ischemic Stroke: A Guideline for Healthcare Professionals from the American Heart Association/American Stroke Association | Stroke." Stroke, www.ahajournals.org/doi/10.1161/STR.0000000000000211. Accessed 5 May 2024.

ⁱⁱ https://www.heart.org/-/media/Files/Professional/Quality-Improvement/Recognition-Criteria/2024/ML_EMSRecognition2024.pdf