

Stroke

Date

August 26, 2021

Definition

The patient experienced a possible stroke.

Criteria Description

Patient care reports where:

- any symptom or impression is stroke
or
- stroke scale score is positive
or
- stroke protocol is used
or
- a stroke destination team pre-arrival alert or activation is performed.

Pseudocode

Patient care reports where:

eSituation.09 - Primary Symptom

eSituation.10 - Other Associated Symptoms

eSituation.11 - Provider's Primary Impression

eSituation.12 - Provider's Secondary Impressions

- G45* Transient cerebral ischemic attacks and related syndromes
- G46* Vascular syndromes of brain in cerebrovascular diseases
- I60* Nontraumatic subarachnoid hemorrhage
- I61* Nontraumatic intracerebral hemorrhage
- I63* Cerebral infarction

OR

eVitals.29 - Stroke Scale Score

- Positive

OR

eProtocols.01 Protocols Used

- Medical-Stroke/TIA

OR

eDisposition.24 - Destination Team Pre-Arrival Alert or Activation

- Yes-Stroke

XPath Code

```
/EMSDataset/Header/PatientCareReport
```

```
[  
  eSituation/(eSituation.09, eSituation.10, eSituation.11, eSituation.12)  
    [matches(., '^(G45)|(G46)|(I60)|(I61)|(I63)')]  
  or  
  eVitals/eVitals.VitalGroup/eVitals.StrokeScaleGroup/eVitals.29 = '3329005'  
  or  
  eProtocols/eProtocols.ProtocolGroup/eProtocols.01 = '9914145'  
  or  
  eDisposition/eDisposition.HospitalTeamActivationGroup/eDisposition.24 = '4224015'  
]
```

SAS Code

```
proc sql;  
  create table StrokeKey as  
  select distinct pcrKey from  
  (  
    select pcrKey from nemsis.factPcrPrimaryImpression where  
      substr(eSituation_11,1,3) in ('G45', 'G46', 'I60', 'I61', 'I63')  
    union  
    select pcrKey from nemsis.factPcrSecondaryImpression where  
      substr(eSituation_12,1,3) in ('G45', 'G46', 'I60', 'I61', 'I63')  
    union  
    select pcrKey from nemsis.factPcrPrimarySymptom where  
      substr(eSituation_09,1,3) in ('G45', 'G46', 'I60', 'I61', 'I63')  
    union  
    select pcrKey from nemsis.factPcrAdditionalSymptom where  
      substr(eSituation_10,1,3) in ('G45', 'G46', 'I60', 'I61', 'I63')  
    union  
    select pcrKey from nemsis.factPcrVital where eVitals_29 = '3329005'  
  )  
;
```

```
select pcrKey from nemsis.factPcrProtocol where eProtocol_01 = '9914145'  
union  
select pcrKey from nemsis.factPcrDestinationTeam where eDisposition_24 =  
'4224015'  
)  
;  
quit;
```

Discussion

eExam.20 - Neurological Assessment has several values that are indicative of a possible stroke. However, it was not included in the criteria for two reasons:

1. It is not possible to infer that the assessment finding was caused by a stroke, unless EMS made such a determination as indicated by the data in the elements that are included in the criteria.
2. eExam.20 is not a national element. Its use in the criteria would cause a different set of records to be selected depending on whether or not it was collected and available in the data set, which would lead to local inconsistencies in the case selection.

The NEMSQA definition for *Stroke-01 Suspected Stroke Receiving Prehospital Stroke Assessment* includes Impressions but not the other elements, partly because completion of Stroke Scale Score is the performance attribute being measured. The NEMSQA measure also limits to 911 calls and patients who are unresponsive or have a GCS of 9 or less, probably because of the intent of measuring the completion of Stroke Scale Score.

References

Stroke-01: Suspected Stroke Receiving Prehospital Stroke Assessment. National EMS Quality Alliance (NEMSQA). nemsqa.org/wp-content/uploads/2020/11/J.-NEMSQA-Stroke-01.pdf.