Seizure

Date

June 27, 2023

Definition

The patient experienced a seizure.

Criteria Description

Patient care reports where:

- any symptom or impression is seizure or
- seizure protocol is used.

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

- F44.5 Conversion disorder with seizures or convulsions
- G40* Epilepsy and recurrent seizures
- P90 Convulsions of newborn
- R56* Convulsions, not elsewhere classified

OR

eProtocols.01 Protocols Used

- Medical-Seizure
XPath Code

/EMSDataSet/Header/PatientCareReport
  [eSituation/(eSituation.09, eSituation.10, eSituation.11, eSituation.12)
     [matches(. , '^\(F44.5\)|\(G40\)|\(P90\)|\(R56\)')]]
     or
     eProtocols/eProtocols.ProtocolGroup/eProtocols.01 = '9914141'
]

SAS Code

proc sql;
  create table SeizureKey as
    select distinct pcrKey from
      (select pcrKey from nemsis.factPcrPrimarySymptom where
       substr(eSituation_09,1,3) in ('G40', 'P90', 'R56') or
       eSituation_09 = 'F44.5'
       union
      select pcrKey from nemsis.factPcrAdditionalSymptom where
       substr(eSituation_10,1,3) in ('G40', 'P90', 'R56') or
       eSituation_10 = 'F44.5'
       union
      select pcrKey from nemsis.factPcrPrimaryImpression where
       substr(eSituation_11,1,3) in ('G40', 'P90', 'R56') or
       eSituation_11 = 'F44.5'
       union
      select pcrKey from nemsis.factPcrSecondaryImpression where
       substr(eSituation_12,1,3) in ('G40', 'P90', 'R56') or
       eSituation_12 = 'F44.5'
       union
      select pcrKey from nemsis.factPcrProtocol where eProtocol_01 = '9914141'
    )
  ;
quit;

Discussion

The ICD-10 section R56 includes R56.1 Post traumatic seizures. Depending on the purpose of a particular project, it may be appropriate to exclude R56.1.
The NEMSQA definition for *Seizure-02 Patient with Status Epilepticus Receiving Intervention* only selects seizures with status epilepticus, but this case definition selects all seizures. The NEMSQA definition can be implemented by searching for impressions with the more restrictive regular expression `/^G40...[1,3]$/`. The NEMSQA definition is also limited to impressions, whereas this case definition includes symptoms as well as impressions. The NEMSQA definition does not include the seizure protocol criterion.

The following potential criteria are not used in this case definition:

- **eDispatch.01 - Dispatch Reason: Convulsions/Seizure.** The reason for dispatch may not match what EMS providers actually found once on scene.
- **eExam.20 - Neurological Assessment: Status Seizure, Other Seizures.** 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.
- **eMedications.03 - Medication Administered: benzodiazepines.** Benzodiazepines may be administered for conditions other than seizure.

The NEMSIS Defined List for Impressions includes three codes related to seizures: G40.89 Other seizures (which has been given the suggested label “Seizure, NOS”); G40.901 Epilepsy, unspecified, not intractable, with status epilepticus (which has been given the suggested label “Seizure, status epilepticus”); and G40.909 Epilepsy, unspecified, not intractable, without status epilepticus (which has been given the suggested label “Seizure, epileptic,” which is inconsistent with the ICD-10 term).

**References**


