NEMSIS V3 Case Definition

Cardiac Arrest

Date

April 28, 2022 (corrected SAS code)
August 26, 2021

Definition

The patient experienced a cardiac arrest with presumed cardiac etiology.

Criteria Description

Patient care reports where:

- any symptom or impression is cardiac arrest
  and
    - cardiac arrest occurred prior to EMS arrival and the etiology is presumed cardiac or blank
    or
    - cardiac arrest occurred after EMS arrival and the etiology is presumed cardiac

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
- I46* Cardiac Arrest
AND
(
    (eArrest.01 Cardiac Arrest
      • Yes, Prior to EMS Arrival
    AND
    eArrest.02 - Cardiac Arrest Etiology
      • Cardiac (Presumed)
      • [Blank]
)
OR

(eArrest.01 - Cardiac Arrest:
   • Yes, After EMS Arrival
AND
(eArrest.02 - Cardiac Arrest Etiology
   • Cardiac (Presumed)
)

XPath Code

/EMSDataSet/Header/PatientCareReport
   [eSituation/(eSituation.09, eSituation.10, eSituation.11, eSituation.12)
      [starts-with(., 'I46')]
and
   (eArrest/eArrest.01 = '3001003'
   and
   eArrest/eArrest.02 = ('3002001', ' ')
   )
or
   (eArrest/eArrest.01 = '3001005'
   and
   eArrest/eArrest.02 = '3002001'
   )
)
]

SAS Code

proc sql;
   create table CardiacArrestKey as
   select distinct pcrKey from
   (select pcrKey from nemsis.factPcrPrimaryImpression
   where substr(eSituation_11,1,3) = 'I46'
   union
   select pcrKey from nemsis.factPcrSecondaryImpression
   ...
where substr(eSituation_12,1,3) = 'I46'
union
select pcrKey from nemsis.factPcrPrimarySymptom
 where substr(eSituation_09,1,3) = 'I46'
union
select pcrKey from nemsis.factPcrAdditionalSymptom
 where substr(eSituation_10,1,3) = 'I46'
)
intersect
(
 select pcrKey from nemsis.pub_pcrEvents
 where eArrest_01 = '3001003' and eArrest_02 in ('3002001', '')
union
 select pcrKey from nemsis.pub_pcrEvents
 where eArrest_01 = '3001005' and eArrest_02 = '3002001'
)
);
quit;

Discussion

The following ICD-10-CM impression and symptom codes were considered for use but not chosen because they select very few additional records:

- I97.12* Postprocedural cardiac arrest
- I97.71* Intraoperative cardiac arrest
- P29.81 Cardiac arrest of newborn
- O03.36 Cardiac arrest following incomplete spontaneous abortion
- O03.86 Cardiac arrest following complete or unspecified spontaneous abortion
- O07.36 Cardiac arrest following failed attempted termination of pregnancy
- O08.81 Cardiac arrest following an ectopic and molar pregnancy
- O29.11* Cardiac arrest due to anesthesia during pregnancy

The following elements were considered for use but not chosen because, for this case definition, it is important to determine whether the cardiac arrest was due to a cardiac etiology:

- eArrest.04 - Arrest Witnessed By
- eArrest.11 - First Monitored Arrest Rhythm of the Patient
- eArrest.14 - Date/Time of Cardiac Arrest
- eVitals.03 - Cardiac Rhythm / Electrocardiography (ECG)
- eProcedures.03 – Procedure: Cardiac resuscitation procedures
- eDisposition.24 - Destination Team Pre-Arrival Alert or Activation: Yes-Cardiac Arrest
This case definition differs from the Cardiac Arrest Registry to Enhance Survival (CARES). The purpose of this case definition is to identify all cardiac arrests with cardiac etiology. The purpose of CARES is to evaluate the effectiveness of EMS response to cardiac arrests with cardiac etiology where resuscitation was attempted. CARES includes the following additional criteria to further limit the record selection:

- Resuscitation is attempted by a 911 responder (CPR and/or defibrillation)
- The patient received an AED shock by a bystander prior to the arrival of 911 responders

References
