



Atherosclerosis Risk in Communities Study

Community Surveillance CHD Events Data Dictionary

April 2017

Community Surveillance CHD Events Data Dictionary

An event consists of a single eligible occurrence or group of eligible occurrences that are linked based on the 28 day criteria and belonging to the same individual. All Occurrence(s) that makes an event will have the same EVENT_ID.

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1. Classification Variables

1.1. ALTDX3

Purpose

To determine the computerized MI diagnosis for hospitalized events in community surveillance.

Description

ALTDX3 is a character variable determined by the worst pain (WPAINDX2), worst enzyme (WENZDX2) and the worst ECG diagnosis (WECGDX) within an event. ALTDX3 is the final computer MI classification for an event in community surveillance.

Type

Event

Algorithm

```
altsurv3=wpaindx2||wecgdx||wenzdx2;  
altdx3=put(altsurv3,$survdx.);
```

Remarks

ALTDX3 takes the values of ALTSURV3 and puts it into format. This variable takes the concatenation of worst pain (WPAINDX2), worst enzyme (WENZDX2), and worst ECG diagnosis (WECGDX) and turns it into values, "No MI", "Suspect MI," "Probable MI," and "Definite MI," based on the highest valued number in the ALTSURV3 concatenation.

Related Variables

WPAINDX2, WENZDX2, WECGDX, ALTSURV3

1.2. ALTSURV3

Purpose

To determine the computerized MI diagnosis for hospitalized events in community surveillance.

Description

ALTSURV3 is a character variable determined by the worst pain (WPAINDX2), worst ECG diagnosis (WECGDX), and the worst enzyme (WENZDX2) within an event. This is similar to ALTDX3 except that it contains the values of each of the 3 components of the final computer MI classification for an event in community surveillance. For example if ALTSURV3='134' this would indicate that the worst pain, ECG, and enzyme diagnoses for this event have the values of 1, 3, and 4, respectively. This translates to an event with no pain of cardiac origin, ECG with evolving ST-T pattern, and an abnormal enzyme diagnosis.

Type

Event

Algorithm

```
altsurv3=wpaindx2||wecgdx||wenzdx2;
```

Remarks

ALTSURV3 concatenates the values of worst pain (WPAINDX2), worst ECG diagnosis (WECGDX), and the worst enzyme (WENZDX2) within an event into a three digit number. ALTSURV3 is then turned into ALTDX3 with a formatting procedure. See ALTDX3.

Related Variables

WPAINDX2, WENZDX2, WECGDX, ALTDX3

1.3. CKMBDX

Purpose

To determine CK-MB (CPK-MB, CK-heart fraction) diagnosis in community surveillance.

Description

CKMBDX is a character variable determined by WCKMB_MAX. If WCKMB_MAX is Normal, CKMBDX is 0 (Normal). If WCKMB_MAX is Equivocal or Abnormal, CKMBDX = 1. WCKMB_MAX is determined by the most severe (highest) diagnosis for the enzyme CK-MB within an event in HRA form Question 43.

Type

Event

Algorithm

For groups 8 and 9:

If WCKMB_MAX (worst CK-MB diagnosis) is "Equivocal" or "Abnormal", then CKMBDX is "Abnormal or Equivocal."

If ANYCKMB (enzyme indicator/DX variable) is 1 then CKMBDX is "Normal"

Else CKMBDX is "Missing"

For groups 3, 4, 6, and 7:

If WCKMB_MAX (worst CK-MB diagnosis) is "Abnormal", then CKMBDX is "Abnormal or Equivocal."

If ANYCKMB (enzyme indicator/DX variable) is 1 then CKMBDX is "Normal"

Else CKMBDX is "Missing"

Remarks

For events without a measurement for this enzyme a value of missing (' ') is given.

Related Variables

WCKMB_MAX, ANYCKMB

1.4. ENZDX2

Purpose

To determine an enzyme diagnosis for hospitalized events that have been downgraded in community surveillance

Description

ENZDX2 is a character variable determined by selected variables in the HRA form, and downgrading criteria. Downgrading (only for occurrences with ENZDX=4) was done by a Special Reviewer to re-classify ("downgrade") the enzyme diagnosis if certain criteria met. Later in study downgrading was evaluated by computer algorithm. See Section 4.2.7 of Manual 3 (Surveillance Component Procedures, version 6.3) for details.

Type

Event

Algorithm

```
if (enzdx='4' & enzstat=2 & '3'<=aricdx<='5') then do;
  if s_elig4 then badenz=1
    enzdx2='3';
  end;
  else enzdx2=enzdx;
```

Remarks

ENZDX2 equals ENZDX for all occurrences that did not meet the criteria for downgrading.

Related Variables

ENZDX, ARICDX

1.5. ENZGP

Purpose

To determine an Enzyme diagnosis group for hospitalized events that have been downgraded in community surveillance

Description

ENZGP is a character variable. ENZGP combines biomarkers diagnoses information, TROPDX (Troponin diagnosis), CKMBDX (CK-MB Diagnosis), and LDHSDX (Lactate Dehydrogenase Diagnosis) to one variable.

Type

Event

Algorithm

ENZGP=TROPDX||CKMBDX||LDHSDX;

Remarks

ENZGP is the concatenation of TROPDX (Troponin diagnosis), CKMBDX (CK-MB Diagnosis), and LDHSDX (Lactate Dehydrogenase Diagnosis).

Related Variables

TROPDX, CKMBDX, LDHSDX

1.6. EVTYPE01

Purpose

To determine the event type classification of individual events in our database.

Description

EVTYPE01 is a character variable determined by the responses to the following selected HRAA DTHA, SXIA and CELB (if cohort) form items as follows:

Form	Item
DTHA:	DTHA12, DTHA13
HRAA:	HRAA17 HRAA19a HRAA19b HRAA19d
SXIA:	SXIA03
CELB:	CELB06 CELB12

Type

Event

Remarks

If the form items disagree as to the event type classification then the discrepancy is identified and sent to the FC for investigation. If the discrepancy remains irresolvable then SXIA03 is used as the arbitrator and as the source of the variable EVTYPE01.

An ER/DOA or a no vital sign death is treated as an Out-of-hospital death (EVTYPE01='O') regardless of the presence of a HRAA form

Related Variables

EVTYPE1, EVTYPE2, EVTYPE3, SXIA03, IF11FLAG, PHQ1FLAG, CORAFLAG, CELB07, HRAAFLAG

1.7. EVTYPE_F

Purpose

To indicate if an event is case-fatality eligible as either a CHD event, heart failure event, or both a CHD event and heart failure.

Description

EVTYPE_F is a character variable. EVTYPE_F is related to case-fatality. For CHD events eligible for case-fatality tracking (midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI'), EVTYPE_F indicates if the event is only CHD eligible, only heart failure eligible or if it is for both CHD and heart failure surveillance event.

Type

Event

Remarks

Related Variables

MIDX3, HFDIAG (from Heart Failure Occurrence dataset)

1.8. F28_NEW

Purpose

To indicate if a death has occurred within 28 days of an MI event

Description

F28_NEW is a numeric variable. F28_NEW is related to case-fatality. For CHD events eligible for case-fatality tracking (midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI'), F28_NEW indicates if the date of death occurred within 28 days of the MI hospitalization date.

Type

Event

Algorithm

If known to have died within 28 days of the event then F28_NEW = 1
If sent for NDI search and was not found to have died within 28 days of Event, then F28_NEW = 0
If not known to have died and not sent for NDI then F28_NEW = 2

```
If 0<= DDCAYS <=28 then F28_NEW=1;  
Else if DDCAYS ne . then F28_NEW=0;  
Else F28_NEW =2;
```

Remarks

For events that are not classified as being MI events (midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI') or were not submitted to NDI this variable has value of 2.

Related Variables

MIDX3, DDCAYS

1.9. F365_NEW

Purpose

To indicate if a death has occurred within 365 days of an MI event

Description

F365_NEW is a numeric variable. F365_NEW is related to case-fatality. For CHD events eligible for case-fatality tracking (midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI'), F365_NEW indicates if the date of death occurred within 365 days of the MI hospitalization date.

Type

Event

Remarks

For events that are not classified as being MI events (midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI') or were not submitted to NDI this variable has value of 2. There is 1 year lag time between Event date and NDI search file, so sometimes it is possible that F365_NEW=2 even if their MIDX3 belongs to 'DEFMI', 'PROBMI' or 'SUSPMI'.

Algorithm

If known to have died within 365 days of the event then F365_NEW = 1
If sent for NDI search and was not found to have died within 365 days of Event, then F365_NEW = 0
If not known to have died and not sent for NDI then F365_NEW = 2

```
If 0<=DDAYS <=365 then F365_NEW=1;  
Else if DDAYS ne . then F365_NEW=0;  
Else F365_NEW =2;
```

Related Variables

MIDX3, DDAYS

1.10. FATALDX3

Purpose

To determine a CHD diagnosis for fatal events in Community Surveillance.

Description

FATALDX3 is the final CHD classification variable for fatal events, which is determined by MMCC reviews or computer algorithm if MMCC reviews are not required.

Type

Event

Remarks

Non-fatal hospitalizations (for all occurrences within an event) have FATALDX3='NONFAT'.

Related Variables

MIDX3

1.11. FATCHD3

Purpose

To indicate a fatal CHD death in community surveillance.

Description

FATCHD3 is a binary variable that represents whether or not the death event was a “Definite Fatal CHD” or “Definite Fatal MI.”

Type

Event

Algorithm

```
fatchd3 = (fataldx3 in ("DEFFATCHD","DEFFATMI"));
```

Remarks

If FATALDX3 is classified as a “Definite Fatal CHD” or “Definite Fatal MI,” then FATCHD3 is a Yes (1).

Related Variables

FATALDX3

1.12. FATCHD_INHOSP

Purpose

To indicate an in-hospital fatal CHD death in community surveillance.

Description

FATCHD_INHOSP is a binary variable which takes the value 1 (Yes) when the event is an In-Hospital Death that is a Definite Fatal CHD or MI.

Type

Event

Algorithm

```
fatchd_inhosp = fatchd3*(evtype01='1');
```

Remarks

When the "In-hospital death" is a "Definite Fatal CHD" or "Definite Fatal MI," FATCHD_INHOSP is "Yes" (1).

Related Variables

EVTTYPE01, FATCHD3

1.13. FATCHD_OUTHOSP

Purpose

To indicate a fatal out-of- hospital CHD death event in community surveillance.

Description

FATCHD_OUTHOSP is a binary variable which takes the value 1 (Yes) when the event is an Out of Hospital Death that is a Definite Fatal CHD or MI.

Type

Event

Algorithm

```
fatcd_outhosp = fatcd3*(evtype01='O');
```

Remarks

When the “Out of hospital death” is a “Definite Fatal CHD” or “Definite Fatal MI,” FATCHD_OUTHOSP is “Yes” (1).

Related Variables

EVTTYPE01, FATCHD3

1.14. MI3

Purpose

To indicate a Probable or Definite MI event in Community Surveillance.

Description

MI3 is a binary variable that is 1 (Yes) if MIDX3 classifies the event as a Probable or Definite MI.

Type

Event

Algorithm

```
mi3 = (MIDX3 IN ("DEFMI","PROBMI"));
```

Remarks

MI3 is Yes (1) if MIDX3 (MI Diagnosis) is a Probable or Definite MI.

Related Variables

MIDX3

1.15. MICHHD3

Purpose

To indicate an MI or fatal CHD death event in Community Surveillance

Description

MICHHD3 is a binary variable which takes on the value 1 (Yes) if the event was a Definite Fatal CHD or Definite Fatal MI or if the MI was a Probably or Definite MI.

Type

Event

Algorithm

if FATCHD3=1 or MI3 = 1 then MICHHD3 = 1;
else MICHHD3 = 0

Remarks

If the event is a Definite Fatal CHD or MI or if the MI was Probable or Definite MI then MICHHD3 is Yes (1). If not, then MICHHD3 is No (0).

Related Variables

FATCHD3, MI3

1.16. MIDX3

Purpose

To determine an MI diagnosis for hospitalized events in Community Surveillance.

Description

MIDX3 is the final MI diagnosis determined by MMCC reviews or computer algorithm if MMCC reviews are not required. MIDX3 comes straight from MDX Question #6 (CDX Question #6 for Cohort Data).

Type

Event

Remarks

Unlinked out-of-hospital deaths have MIDX='NO-HOSP' (no hospitalizations)

Related Variables

ALTDX3

1.17. NSTEMI

Purpose

To indicate an MI event without Segment Elevation in Community Surveillance

Description

NSTEMI is the binary variable for Probable or Definite MIs without ST – segment elevation.

Type

Event

Algorithm

```
if MIDX3 in ("DEFMI","PROBMI") and ENZDX2 in (3,4) and STEL=0 then NSTEMI=1;  
else NSTEMI=0;
```

Remarks

If the MI was Probable or Definite and the Enzyme Diagnosis was Equivocal or Abnormal and the S-T segment was not elevated, then NSTEMI is Yes (1)

Related Variables

MIDX3, ENZDX2, STEL

1.18. RMI

Purpose

To indicate a Recurrent Myocardial Infarction Event in Community Surveillance

Description

RMI is a binary variable that takes on the value 1 (Yes) if the event was a Probable or Definite MI and there was a history of MI or fatal CHD as explained by variable PRVRNK1.

Type

Event

Algorithm

$rmi = mi3 * (prvrnk1 = 1);$

Remarks

If the event is a Probable or Definite MI and there is a history of MI or Fatal CHD then RMI is "Yes" (1).

Related Variables

PRVRNK1, MI3

1.19. STEL

Purpose

To indicate whether Segment Elevation occurred in an MI event in Community Surveillance

Description

STEL is a binary variable to indicate ST-segment elevation .

Type

Event

Algorithm

```
If stel1 > 0 then stel = 1  
else stel = 0
```

Remarks

STEL1 takes on the value 1 when any of V31 – V39 (variables from dataset UC5892s2, from running the community surveillance MGP) is 2. Therefore, STEL is 1, when any of the V31-V39 are 2.

Related Variables

STEL1, V31 through V39

1.20. STEMI

Purpose

To indicate an MI event with Segment Elevation in Community Surveillance

Description

STEMI is the binary variable for Probable or Definite MIs with ST – segment elevation.

Type

Event

Algorithm

```
if MIDX3 in ("DEFMI","PROBMI") and ENZDX2 in (3,4) and STEL=1 then STEMI=1;
else STEMI=0;
```

Remarks

If the MI was Probable or Definite and the Enzyme Diagnosis was Equivocal or Abnormal and the S-T segment was elevated, then STEMI is Yes (1)

Related Variables

MIDX3, ENZDX2, STEL

1.21. TROPDX

Purpose

To indicate a troponin diagnosis in a Community Surveillance CHD event.

Description

TROPDX is a character variable. TROPDX is determined by WTRO_MAX. If WTRO_MAX is Normal, TROPDX is 0 (Normal). If WTRO_MAX is Equivocal or Abnormal, TROPDX = 1. WTRO_MAX is determined by the most severe (highest) diagnosis for the Troponin I and T within an event in HRA form Question 43.

Type

Event

Algorithm

For groups 8 and 9:

If WTRO_MAX (worst troponin diagnosis) is “Equivocal” or “Abnormal”, then TROPDX is “Abnormal or Equivocal.”

If ANYTRO (enzyme indicator/DX variable) is 1 then TROPDX is “Normal”

Else TROPDX is “Missing”

For groups 3, 4, 6, and 7:

If WTRO_MAX (worst CK-MB diagnosis) is “Abnormal”, then TROPDX is “Abnormal or Equivocal.”

If ANYTRO (enzyme indicator/DX variable) is 1 then TROPDX is “Normal”

Else TROPDX is “Missing”

Related Variables

WTRO_MAX, ANYTRO

1.22. UCOD

Purpose

To indicate the Underlying Cause of CHD Death from NDI search results.

Description

UCOD is a character variable. UCOD is related to case-fatality. UCOD is the primary underlying cause of death provided by NDI search (ICD-10). UCOD is obtained by the DTH form question 18.

Type

Event

Algorithm

UCOD=left(dtha18);

Remarks

For events that are not classified as being MI events (midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI') or were not submitted to NDI this variable has missing value.

Related Variables

MIDX3, EVTYPE_F

1.23. WCKMB_MAX

Purpose

To determine the worst CK-MB diagnosis for hospitalized events in community surveillance.

Description

WCKMB_MAX is a character variable determined by the most severe (highest) diagnosis for the enzyme CK-MB within an event. For events without a measurement for this enzyme a value of missing (' ') is given. CK-MB is recorded in HRA form Question 43.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2, CKMBDX

1.24. WCK_MAX

Purpose

To determine the worst CK diagnosis for hospitalized events in community surveillance.

Description

WCK_MAX is a character variable determined by the most severe (highest) diagnosis for the enzyme creatine kinase within an event. For events without a measurement for this enzyme a value of missing (' ') is given.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2

1.25. WECGDX

Purpose

To determine the worst computer ECG diagnosis for an event in community surveillance.

Description

WECGDX is a character variable determined by the most severe (highest) value of ECGDX within an event. WECGDX is set to '1' for occurrences where no ECG's forms were found.

Type

Event

Related Variables

ECGDX

1.26. WENZDX2

Purpose

To determine an overall enzyme diagnosis (downgraded) for an event in community surveillance.

Description

WENZDX2 is a character variable determined by the most severe (highest) value of ENZDX2 within an event. WENZDX2 is set to '1' for out-of-hospital deaths, events that skip out of the HRA form prior to answering HRAA23, or events missing HRAA forms.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2

1.27. WL12_MAX

Purpose

To determine the worst computer diagnosis for LDH1:LDH2 ratio for an event in community surveillance.

Description

WL12_MAX is a character variable determined by the most severe (highest) diagnosis for the ratio of lactate dehydrogenase 1 and 2 (LDH1:LDH2) within an event. For events without a measurement for these enzymes a value of missing (' ') is given.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2

1.28. WLDH_MAX

Purpose

To determine the worst computer diagnosis for LDH ratio for an event in community surveillance.

Description

WLDH_MAX is a character variable determined by the most severe (highest) diagnosis for the enzyme lactate dehydrogenase within an event. For events without a measurement for this enzyme a value of missing (' ') is given.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2

1.29. WPAINDX2

Purpose

To determine an overall pain diagnosis (downgraded) for an event in community surveillance.

Description

WPAINDX2 is a character variable determined by the most severe (highest) value of PAINDX2 within an event. WENZDX2 is set to '1' for out-of-hospital deaths, events that skip out of the HRA form prior to answering HRAA23, or events missing HRAA forms.

Type

Event

Related Variables

PAINDX, PAINDX2

1.30. WTROPTMAX

Purpose

To determine the worst computer diagnosis for troponin T for an event in community surveillance.

Description

WTROPTMAX is a character variable determined by the most severe (highest) diagnosis for the biomarker troponin T within an event. For events without a measurement for this biomarker a value of missing (' ') is given.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2

1.31. WTROP_MAX

Purpose

To determine the worst computer diagnosis for troponin I for an event in community surveillance.

Description

WTROP_MAX is a character variable determined by the most severe (highest) diagnosis for the biomarker troponin I within an event. For events without a measurement for this biomarker a value of missing (' ') is given.

Type

Event

Related Variables

ENZDX, ENZDX2, WENZDX2

2. Demographic Variables

2.1. AGE2

Purpose

To determine an individual's age at each event in Community Surveillance.

Description

AGE2 is a numeric variable. Age2 indicate the individual's age at the event.

Type

Demographic

Algorithm

```
age2=year(evtat4)-year(newdob)-prebday;
```

Related Variables

AGEGRP, AGEN, EVTAT4, NEWDOB, PREBDAY

2.2. CENTER

Purpose

To identify the field center from which a participant for a given occurrence originates.

Type

Demographic

Description

CENTER is a character variable.

2.3. GENDER1

Purpose

To determine the gender for each event in community surveillance.

Type

Demographic

Description

GENDER1 is derived for inconsistent gender information across all forms within an event.

Remarks

GENDER1 is derived for community surveillance only. For cohort surveillance participants, variable GENDER in the Cohort derived file can be used to identify gender.

Algorithm

GENDER1 takes the non-missing value of SEX* that occurred most frequently within an event. When male and female counts are equal, GENDER1 takes the value of the most current non-missing SEX.

SEX is determined for each ID by the non-missing value of the listing order: FTRA22, DTHA04, HRAA08 (CHIA03).

2.4. RACE1

Purpose

To determine the race group for each person in community surveillance.

Type

Event

Remarks

RACE1 is derived for community surveillance only. For cohort surveillance participants, variable RACEGRP in the Cohort derived file can be used to identify race.

Algorithm

RACE1 takes the value of RACE* that occurred most frequently within an event. If the maximum counts are equal for two or more race groups, RACE1 is the most recent RACE.

RACE takes one of the following non-missing race values in the listing order: FTRA23 (for cohorts only), DTHA05, HRAA09. If race is missing from all forms listed above, RACE takes a missing value.

3. Identification Variables

3.1. CHRT_ID (CELB02)

Purpose

To map a surveillance ID to the Cohort participant ID.

Description

CELB02 is a character variable. CELB02 is the cohort participant ID from question number 2 of the Cohort Event Eligibility (CEL) form. CELB02 is the same for all occurrences within a person. For any community surveillance occurrence that is not for an ARIC cohort participant CELB02 is missing.

Type

Occurrence

Algorithm

Celb02 = chrt_id

Related variables

EVT_ID2, C_EVTID, ID, CELB02

3.2. EVENT_ID

Purpose

To determine an event ID for Community Surveillance.

Description

EVENT_ID is the ID from the most recent occurrence within an event. EVENT_ID is the same for all occurrences within an event. If an event contains only one ID, then EVENT_ID=ID. Occurrences are considered linked if they happened within 28 days of each other.

Type

Event

Remarks

EVENT_ID (for community surveillance) is an analogy to C_EVTID (for cohort surveillance).

Related Variables

LINK, C_EVTID

3.3. HRAA01A

Purpose

To determine the hospital number.

Description

To determine the hospital code number.

Type

Event

Algorithm

<u>Forsyth County</u>	<u>Name</u>	<u>Hospital Type</u>	<u>Notes</u>
11	North Carolina Baptist	Teaching	
12	Forsyth County Memorial	Non teaching	
13	Medical Park	Non teaching	
14	Kernersville	Non teaching	
15	Clemmons Medical Center	Non teaching	
96	Hospital outside study area	--	
<u>Jackson</u>			
21	University of Mississippi Med Center	Teaching	
22	Veterans Administration Hospital	Teaching	
23	St. Dominic's Hospital	Non teaching	
24	Central Mississippi Medical Center	Non teaching	
25	Mississippi Baptist Hospital	Non teaching	
26	River Oaks Hospital	Non teaching	
27	Madison County Medical Center	Non teaching	JHS only
28	Rankin Medical Center	Non teaching	JHS only
97	Hospital out of study area	--	
<u>Minneapolis</u>			
30	Abbott-Northwestern	Teaching	
31	Riverside Medical Center	Teaching	
32	Fairview-Southdale	Non teaching	
33	Fairview-Ridges	Non teaching	
34	Hennepin County Med. Center	Teaching	
35	Mercy Hospital	Non teaching	
36	Methodist Hospital	Teaching	
37	Metropolitan	Non teaching	
38	Midway	Non teaching	
39	Mt. Sinai	Non teaching	
40	North Memorial	Teaching	

41	St. Paul Ramsey	Non teaching
42	St. John's Northeast	Non teaching
43	St. Mary's	Non teaching
44	Unity	Non teaching
45	University of Minnesota Hospital	Teaching
46	VA Hospital	Teaching
47	Fairview Medical Center	Non teaching
48	Phillips Eye Institute	Non teaching
98	Hospital out of study area	--

Washington Co.

51	Meritus Medical Center	Non teaching
52	Western Maryland Center	Non Teaching
53	VA Medical Center, WV	Non Teaching
54	University of Maryland	Teaching
55	Frederick Memorial	Non teaching
56	Johns Hopkins Hospital	Teaching
57	Washington Hospital Center	Non Teaching
58	George Washington University	Teaching
59	Georgetown University	Teaching
60	Saint Joseph Medical Center	Non teaching
61	Washington Adventist	Non teaching
62	Sinai Hospital	Non teaching
63	Union Memorial	Non Teaching
99	Hospital out of study area	--

Related Variables

Teaching

3.4. TEACHING

Purpose

To determine whether the hospital is a teaching hospital.

Description

To determine whether the hospital is a teaching hospital.

Type

Event

Algorithm

See the algorithm under HRAA01A (hospital codes) for details.

Related Variables

HRAA01A

4. Sampling Variable

4.1. CODESTRAT

Purpose

To Indicate the sampling stratum for an event.

Description

CODESTRAT is a character variable. CODESTRAT is derived from the center, race, gender, discharge code group, and date of discharge. Most statistical software packages require the use of this type of variable in weighted analyses to indicate the sampling strategy used.

Please contact the ARIC coordinating center if you need further details about this variable.

Type

Event

Related Variables

EVTYPE01, LINK, MINHSPMXEL, NESTVAR1, dthcdgrpel

4.2. NESTVAR2

Purpose

To determine the nesting variable for sampling stratum for ages 35 to 74 for surveillance data.

Description

NESTVAR2 is used as a nesting variable for sampling stratum for ages 35 to 74.

Type

Event

Algorithm

NESTVAR2 is a hardcoded variable from NESTVAR1. It takes the values of NESTVAR1 and adjusts them if sample size is too small.

Remark

NESTVAR2 is a modification of NESTVAR1

Related Variables

NESTVAR1, CENTRACE, SEXF

4.3. NESTVAR_COMBN

Purpose

To determine the nesting variable for sampling stratum for all ages in the surveillance data.

Description

NESTVAR_COMBN is the nesting variable for sampling stratum across all ages (35- 84). It uses the information from NESTVAR2 (ages 35-74) and NESTVAR_OLD (ages 75-84) to achieve this.

Type

Event

Algorithm

```
If NESTVAR2 ne . then NESTVAR_COMBN=NESTVAR2;  
else if NESTVAR_OLD ne . then NESTVAR_COMBN=NESTVAR_OLD;  
else NESTVAR_COMBN= . ;
```

Remarks

NESTVAR_COMBN takes on the value of NESTVAR2, provided that NESTVAR2 is defined. If NESTVAR2 is not defined, and NESTVAR_OLD is defined, then NESTVAR_COMBN is NESTVAR_OLD. If NESTVAR2 and NESTVAR_OLD are both not defined, then NESTVAR_COMBN is undefined (.).

Related Variables

NESTVAR2, NESTVAR_OLD

4.4. NESTVAR_OLD

Purpose

To determine the nesting variable for sampling stratum for ages 75 to 84 for surveillance data.

Description

NESTVAR_OLD is used as a nesting variable for sampling stratum for ages 75-84.
NESTVAR_OLD is created using information about race, gender, codestrat, and ARIC center.

Type

Event

Remarks

NESTVAR_OLD is created from first producing a frequency table for RACE*GENDER*CODESTRAT*YEARGRP, the counts from this frequency table are added to a constant (e.g. 500, or 700) depending on the ARIC center and then certain NESTVAR_OLD are modified (e.g. nestvar_old = 505 then nestvar_old = 504)

Related Variables

RACE, GENDER, CODESTRAT, YEARGRP

4.5. SAMWT

Purpose

To determine sampling weight for an event.

Type

Event

Remarks

SAMWT is a numeric variable determined by the values of the derived variable SAMP and the number of links for an event. For non-missing SAMWT, it takes values greater than or equal to 1. If any occurrence within an event has SAMWT=1, then SAMWT=1 for that event.

Algorithm

SAMWT is the inverse of the linked sampling probability of an event. The linked sampling probability of an event with i occurrences, say α_i ($i=1, 2, \dots, l$), is a recursive sum of α_{i-1} which is defined as follows.

Let P_i denote the sampling probability of the i th linked occurrence (defined by SAMP), α_i denote the linked sampling probability for an event with i occurrences. Define $\alpha_0=0$. Then

$$\alpha_i = \alpha_{i-1} + (1-\alpha_{i-1}) * P_i \text{ for } i=1, 2, \dots, l$$

Following table shows the linked sampling probabilities (α_i) for events with 1 to 3 occurrences.

of linked Occurrences Linked Sampling Probability for an Event

1	$0+(1-0)*P_1$	$=P_1$
2	$P_1+(1-P_1)*P_2$	$=P_1 + P_2 - P_1 P_2$
3	$[P_1 +(1-P_1)*P_2]+[1-(P_1 +P_2 - P_1 P_2)]*P_3$	$=P_1+P_2+P_3-P_1P_2-P_1P_3-P_2P_3+P_1P_2P_3$

Related Variables

SAMP

4.6. SAMWT_TRIM

Purpose

To determine trimmed sampling weight for an event.

Description

SAMWT_TRIM reduces the range of SAMWT by setting any SAMWT \geq 15.88 to 15.88.

Type

Event

Algorithm

```
if samwt  $\geq$  15.88 then samwt_trim=15.88;  
else samwt_trim=samwt;
```

Remarks

If SAMWT is greater than or equal to 15.88 then SAMWT_TRIM is 15.88. Otherwise, SAMWT_TRIM is equal to SAMWT.

Related Variables

SAMWT

5. Event Date Variables

5.1. DDAYS

Purpose

To determine the number of days from a CHD event to the date of death.

Type

Occurrence

Description

DDAYS is a numeric variable. DDAYS is related to case-fatality. For CHD events with midx3 = 'DEFMI', 'PROBMI' or 'SUSPMI', DDAYS determine the number of days from a CHD event to the date of death.

Related Variables

5.2. DTHDATE

Purpose

To determine a death date for a fatal event.

Type

Occurrence

Description

DTHDATE will assume one of the following dates: DTH09, HRAA14, CELB04, or DDATE in the order indicated on the table below if the person is deceased. DTH09 records the date of death from the death Certificate, HRAA14 records the date of discharge or death from the hospital medical record, CELB04 records the date of death or discharge looking at a series of forms, and CELB06 asks if it is a death. Non-fatal occurrences have DTHDATE = .N. If EVTYPE01 cannot be determined, DTHDATE=.U.

DTHDATE	Description
DTH09	If (EVTYPE01='I' or 'O') and DTH09 is non-missing
HRAA14	If (EVTYPE01='I' or 'O') and DTH09 is missing <u>and</u> (HRAA17=D and HRAA14 is not missing)
CELB04	IF (EVTYPE01='I' OR 'O') AND DTH09 AND HRAA14 ARE BOTH MISSING AND CELB04 IS NOT MISSING AND CELB06 = 'Y'
DDATE	If (EVTYPE01='I' or 'O') and (DTH09, HRAA14, and CELB04 are all missing)
.N	If EVTYPE01 = 'N' (Non-Fatal occurrence)
.U	Otherwise

Remarks

DTHDATE may contain non-validated death dates obtained from information other than the death certificates. To use only validated death date, DTH09 is the variable to use.

Related Variables

EVTYPE01, DDATE

5.3. EVTDAT4

Purpose

To determine an event date (fatal or nonfatal) for events identified by community surveillance.

Type

Event

Description

EVTDAT4 is the event date determined by MIDATE or DTHDATE following the algorithm below.

Algorithm

EVTDAT4	Description
MIDATE	If MIDX3='DEFMI' or 'PROBMI'
DTHDATE	If (FATALDX3='DEFFATCHD' or 'DEFFATMI') & (MIDX3 not ('DEFMI','PROBMI'))
MIDATE	if (FATALDX3 not 'DEFFATCHD' or 'DEFFATMI') & (MIDX3 not ('DEFMI','PROBMI')) and 1 <= HSPMXEL <= 4
DTHDATE	if not above and DTHELIG=1
MIDATE	otherwise

Related Variable

MIDATE, DTHDATE, HSPMXEL, DTHELIG

5.4. MIDATE

Purpose

To determine a MI date for Events in Community Surveillance.

Type

Event

Description

MIDATE is the hospitalization date (HSPDATE) from the occurrence that has the “worst” ARICDX2 classification within an Event. If two occurrences have even worst ARICDX2, choose the HSPDATE from the occurrence with more severe enzymes (greater ENZDX2). If ENZDX2 are again even, choose the earlier HSPDATE.

Algorithm

Event Description	ALGORITHM
One occurrence	MIDATE=HSPDATE
Multiple linked occurrences: All are hospitalizations	MIDATE=HSPDATE of the occurrence with the worst ARICDX2. If even ARICDX2, use the one with greater ENZDX2. If even ENZDX2, use the earlier HSPDATE
Multiple linked occurrences: Out-of-hospital death linked to a non-fatal hospitalizations	MIDATE=HSPDATE of the hospitalized occurrence with the worst ARICDX2. If even ARICDX2, follow above algorithm.

Example

The following occurrences for EVENT_ID=1020193 have a MIDATE=09/30/87. This event is a multiple linked occurrences where all occurrences are hospitalized. Because of even ARICDX2 and even ENZDX2, the earlier HSPDATE with the worst ARICDX2 and ENZDX2 is applied.

ID	EVTYPE01	HSPDATE
1059737	N	
1149237	N	
1059782	N	
1020193	I	

The MIDATE is 09/30/87 for this case.

Related Variables

HSPDATE, ARICDX2, ENZDX

6. Sudden Cardiac Death Variables

6.1. SUDTH1

Purpose

Identify fatal events as “Sudden Cardiac Death”, defined by death within 1 hour from onset of acute symptoms.

Description

SUDTH1 is determined by HRA25g or (DTH09, DTH11, HRA11a & HRA11b) for in-hospital deaths (IHD). It is determined by MMCC reviews (MDX15b/CDX15b) for out-of-hospital deaths (OHD).

Type

Event

Remarks

SUDTH1 is defined for a subset of fatal events with the following fatal classifications: definite fatal MI, definite fatal CHD and possible fatal CHD. A classification of SUDTH1 exists for both community and cohort events. Information from the most current batch is used to define SUDTH1 when there are multiple batches of reviews (due to data changes).

Algorithm

*definition of Death time:

IHD: death time is defined by HRA25g (time from onset of this event to death), or by the difference between death time (DTH09/11) and admission time (HRA11a/b) if HRA25g is unknown. If death time is missing and the length between death date and admission date is greater than one day, then death time is greater than 24 hours.

OHD: If there is only one reviewer, take the value of MDX15b/CDX15b.
If there are more than one reviewer, then

- a. Take adjudication value if present and not unknown, else
- b. Take the non-missing value if only one time diagnosis is available and not unknown, else
- c. Take a random selection of 2 non-missing values if two time diagnosis are both available and both not unknown, else
- d. Death time is unclassifiable if no death time diagnosis is available.

Related Variables

HRA25g (time from onset of this event to death), DTH09 (death date), DTH11 (death time), HRA11a (date of arrival), HRA11b (arrival time), MDX15b (time to death from onset of acute symptoms in community surveillance), CDX15b (time to death from onset of acute symptoms in cohort surveillance)

6.2. SUDTH24

Purpose

Identify fatal events as “Sudden Cardiac Death”, defined by death within 24 hours from onset of acute symptoms.

Description

SUDTH24 is determined by HRA25g or DTH09, DTH11, HRA11a and HRA11b for in-hospital deaths (IHD). It is determined by MMCC reviews (MDX15b/CDX15b) for out-of-hospital deaths (OHD).

Type

Event

Remarks

SUDTH24 is similar to SUDTH1, except it is defined based on death within 24 hours.

Algorithm

*definition of Death time:

IHD: death time is defined by HRA25g (time from onset of this event to death), or by the difference between death time (DTH09/11) and admission time (HRA11a/b) if HRA25g is unknown. If death time is missing and the length between death date and admission date is greater than one day, then death time is greater than 24 hours.

OHD: If there is only one reviewer, take the value of MDX15b/CDX15b.
If there are more than one reviewer, then

- a. Take adjudication value if present and not unknown, else
- b. Take the non-missing value if only one time diagnosis is available and not unknown, else
- c. Take a random selection of 2 non-missing values if two time diagnosis are both available and both not unknown, else
- d. Death time is unclassifiable if no death time diagnosis is available.

Related Variables

HRA25g (time from onset of this event to death), DTH09 (death date), DTH11 (death time), HRA11a (date of arrival), HRA11b (arrival time), MDX15b (time to death from onset of acute symptoms in community surveillance), CDX15b (time to death from onset of acute symptoms in cohort surveillance).

7. History Variables

7.1. INCCHD3

Purpose

To determine if an MI or fatal CHD community surveillance event is an event.

Description

INCCHD3 identifies MI or fatal CHD events that have no indication of previous history of myocardial infarction as defined by the variable PRVRNK1 (see definition below)

Algorithm

if PRVRNK1 \neq 1 and (MIDX3 includes ('DEFMI', 'PROBMI') or FATALDX3 includes ('DEFFATCHD', 'DEFFATMI')) then INCCHD3=1.
Otherwise INCCHD3=0.

Type

Event

Related Variables

MIDX3, FATALDX3, PRVRNK1

7.2. INCDEFMI (DEFMI)

Purpose

To determine if a Definite MI event was an “incident” definite MI for the surveillance events.

Description

INCDEFMI identifies definite MI events that have no indication of previous history of myocardial infarction as defined by the variable PRVRNK1 .

Algorithm

if PRVRNK1 \neq 1 and (MIDX3 includes is “DEFMI” or then INCDEFMI=1.
Otherwise INCDEFMI=0.

Type

Event

Related Variables

PRVRNK1, MIDX3

7.3. INCFATCHD

Purpose

To determine if a fatal CHD event was an “incident” fatal CHD for the surveillance events.

Description

INCFATCHD describes whether or not the event was a fatal CHD event for a person without history of MI or fatal CHD (as defined by PRVRNK1).

Type

Event

Algorithm

```
incfatchd = fatchd3*(prvrnk1 ne 1);
```

Remarks

If the event was a fatal CHD (fatchd3) and there was no history of MI /fatal CHD then INCFATCHD is 1.

Related Variables

FATCHD3, PRVRNK1

7.4. INCMi3

Purpose

To determine if an MI community surveillance event is an incident event.

Description

INCMi3 identifies MI events that have no indication of previous history of myocardial infarction as defined by the variable PRVRNK1 (see definition below).

Algorithm

if PRVRNK1 \neq 1 and (MIDX3 includes ('DEFMI', 'PROBMI')) then INCMi3=1.
Otherwise INCMi3=0.

Type

Event

Remarks

If there was no previous history of MI or fatal CHD, and the event was a Definite MI or Probable MI, then INCMi3 is "Yes" (1). Otherwise, INCMi3 is "No" (0).

Related Variables

MIDX3, PRVRNK1

7.5. INCNSTEMI

Purpose

To determine whether the event was an “incident” Probable or Definite MI without ST – segment elevation.

Description

INCNSTEMI is a binary variable that explains if the event was an Incident (no history of MI or fatal CHD event as defined by PRVRNK1) Non-ST-Segment Elevation Probable or Definite MI (as defined by NSTEMI).

Type

Event

Algorithm

```
if NSTEMI= 1 and prvrnk1 NE 1 then incNSTEMI =1;  
else incNSTEMI = 0;
```

Remarks

If the event was a Probable or Definite MIs without ST – segment elevation, and there was no history of Mi or fatal CHD, then incNSTEMI is Yes (1).

Related Variables

NSTEMI, PRVRNK1

7.6. INCSTEMI

Purpose

To determine whether the event was an “incident” Probable or Definite MI with ST – segment elevation.

Description

INCSTEMI is a binary variable that explains if the event was an Incident (no history of MI or fatal CHD event as defined by PRVRNK1) with ST-Segment Elevation Probable or Definite MI (as defined by STEMI).

Type

Event

Algorithm

```
if STEMI=1 and prvrnk1 NE 1 then incSTEMI = 1;  
else incSTEMI = 0;
```

Remarks

If the event was a for Probable or Definite MIs with ST – segment elevation, and there was no history of Mi or fatal CHD, then incSTEMI is Yes (1).

Related Variables

STEMI, PRVRNK1

7.7. PRVRNK1

Purpose

To determine if there is a MI/CHD history for community surveillance events.

Type

Event

Description

For hospitalized events, PRVRNK1 is determined by the first HRA19f or first HRA32. For out-of-hospital deaths, PRVRNK1 is determined by the listing order of all PHQ3f, COR15a, or all IFI14 & IFI15. Note an out-of-hospital deaths may have at most three IFI and two PHQ.

Remarks

This variable is for community surveillance events only. For cohort surveillance participants, variable PREVM104 or PRVCHD05 in the Cohort derived file (DERIVE06) should be used to identify history of MI and/or CHD.

Algorithm

If first HRA19f or first HRA32 is yes, then PRVRNK1=1, else
if first HRA19f or first HRA32 is no, then PRVRNK1=0, else
if any of the PHQ3f is yes, then PRVRNK1=1, else
if any of the PHQ3f is no, then PRVRNK1=0, else
if COR15a is yes, then PRVRNK1=1, else
if COR15a is no, then PRVRNK1=0, else
if any of the (IFI14=yes and IFI15=yes), then PRVRNK1=1, else
if any of the (IFI14=yes and IFI15=no) or IFI14=no, then PRVRNK1=0, else
PRVRNK1=missing

Related Variables

HRA19f, HRA32, PHQ3f, COF15a, IFI14, IFI15

8. Miscellaneous Variables

8.1. LDHSDX

Purpose

To determine Lactate Dehydrogenase diagnosis in community surveillance.

Description

LDHSDX is a character variable determined by WOTHER_MAX. If WOTHER_MAX is Normal, LDHSDX is 0 (Normal). If WOTHER_MAX is Equivocal or Abnormal, LDHSDX = 1. WOTHER_MAX is determined by the most severe (highest) diagnosis for Lactate Dehydrogenase within an event.

Algorithm

For groups 8 and 9:

If WOTHER_MAX (worst Lactate Dehydrogenase diagnosis) is “Equivocal” or “Abnormal”, then LDHSDX is “Abnormal or Equivocal.”

If ANYOTHER (enzyme indicator/DX variable) is 1 then LDHSDX is “Normal”

Else LDHSDX is “Missing”

For groups 3, 4, 6, and 7:

If WOTHER_MAX (worst Lactate Dehydrogenase diagnosis) is “Abnormal”, then LDHSDX is “Abnormal or Equivocal.”

If ANYOTHER (enzyme indicator/DX variable) is 1 then LDHSDX is “Normal”

Else LDHSDX is “Missing”

Type

Event

Related Variables

WOTHER_MAX, ANYOTHER

8.2. TWAVI

Purpose

To determine the T-Wave Inversion for an event in the surveillance data.

Description

TWAVI is created from the SEC form and describes whether or not there was T-Wave Inversion for an event.

Type

Event

Algorithm

```
twavi = 0;  
if sum( of v81-v89) >= 1 then twavi = 1;
```

Remarks

V81 – V89 are columns from the dataset created from the SEC form, running the community surveillance MGP. So if at least 1 of the variables V81 through V89 are 1, then TWAVI = 1.

Related Variables

V81 through V89