



Atherosclerosis Risk in Communities Study

Cohort Exam Visit 7 NCS

DERIVE71_NP Derived Variable Dictionary (v2.0)

August 2023

ARIC DERIVE71_NP Derived Variable Dictionary

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NEW OR CHANGED FROM PREVIOUS DISTRIBUTION

This table describes the changes to the last published DERIVE71 dictionary. The DERIVE71 dataset is final and frozen (as of May 2021). As the dataset undergoes modifications, this table will describe the updates made to the previously distributed dataset.

Modification Date	Variable Name	Reason(s) for Change
5/28/2021	CHOLMDCODE73, CHOLMDCODE74 HYPTMDCODE72 STATINCODE72 ASPIRINCODE72 ANTIANXMDCODE72 ANTIPSYCHMDCODE72 HYPNOTMDCODE72 ANTICONVMDCODE72 ANTIDEMMDCODE72 CNSALTMDCODE72 BETAMDCODE72 ANGINHMDCODE72 ANGIANTMDCODE72 ALDANTMDCODE72 LOOPDIUMDCODE72 DIGMDCODE72 PREVDEFHF71, PREVDEFPOSSH71 DIABTS77	Added the following variables: 1. New medication variables with updated inclusions and exclusions of medication codes. NOTE: Outdated versions are now marked as "DO NOT USE," but are retained for the purpose of reproducibility. 2. Prevalent heart failure variables (similar to DERIVE61) 3. Diabetes variable version 7 (similar to DERIVE61 variable, DIABTS67).
5/28/2021	PRVCHD71, PRVCHD73, PRVSTR71	Updated relevant variables with the 2019 cohort surveillance event data that closed in December 2020.
5/28/2021	REVIEWERSYND71, COGDIAG71	Updated relevant neurocognitive variables with final, frozen reviewer diagnoses.
5/28/2021	WALKAID71, WALKAID72 WALK4M71, WALK4M72 TR1WALK4MSP71, TR2WALK4MSP71 AVGWALK4MSP71, MINWALK4MSP71 WALKSPEED15FT71 WALKSPEEDCOMP71 GAITSPPEED71, SPPB4M71 SPPBCS71, SPPBTS71, SPPBBAL71 SPPB71 FRAILTY71a, FRAILTY71b FRAILTY73, FRAILTY74	Updated relevant physical function variables: 1. Added ACHIEVE PFX data that was missing from the last interim distribution (n=136). 2. SPRT_I71 cut point for females was changed from 1.75 to 1.70 for relevant FRAILTY variables. This change had no impact on the component score.
5/28/2021	RES_DNA, RES_OTH	Updated the consent restriction variables with most recent participant consent status.
6/29/2020	All	The V7 form data is frozen and being distributed.

1. OVERVIEW

The DERIVE71_NP dataset contains 3589 records, one for each participant who completed Stage 1 at Visit 7. The purpose of this dataset is to provide ARIC collaborators widely used, verified derived variables, many of which are consistent with variables derived at prior visits.

The dataset naming convention is as follows: The dataset name retains the retrieval date (ex: DERIVE71_200624_NP) until the dataset is considered final, frozen. After a dataset is frozen, the retrieval date is dropped from the dataset name (ex: DERIVE71_NP). The first digit in the dataset name refers to the visit number. The second digit in the dataset name is incremented in number when the current dataset undergoes significant changes. The variable naming convention is similar: Across-visit variables have identical names except for the second to last digit in the variable name, which represents the visit number (ex: GENDER61 at Visit 6 vs. GENDER71 at Visit 7). The last digit in the variable name identifies the definition version of a variable.

Datasets with “NP” in the name have date variables removed; date variables are replaced with a variable that calculates the number of follow up days after Visit 1 date and the year of the original date variable.

Most of the variables are derived directly from the data collected at the visit. However, some variables use ARIC cohort surveillance and ARIC follow-up data in their definitions. DERIVE71 is now final, frozen and the variables have been updated to account for 2019 event data from the ARIC surveillance datasets.

Laboratory variables are separated from DERIVE and select neurocognitive variables are removed from DERIVE, as described in the ‘New or Changed from PREVIOUS Distribution’ section.

2. ADMINISTRATIVE

2.1 SUBJECTID (ARIC Subject ID (CIR))

Type: Character; length: \$7.

2.2 ID (ARIC ID - same as SUBJECTID)

Description: The historical participant identifier from visits 1-4 is ID. The value of ID is the same value as SUBJECTID. Use ID when merging visit 7/NCS stage 1 data with datasets from previous visits necessary for longitudinal analyses.

Type: Character; length: \$7.

Algorithm: ID=SUBJECTID

Source variable(s): SUBJECTID

2.3 CENTER (Field Center)

Description: Character variable with four possible values derived from the enrollment site:
F: Forsyth County, North Carolina
J: The city of Jackson, Mississippi
M: Selected northwestern suburbs of Minneapolis, Minnesota
W: Washington County, Maryland

Type: Character; length: \$1.

Algorithm: CENTER = First letter of the subject ID

Source variable(s): SUBJECTID

2.4 V7CENTER (Visit 7 Field Center)

Algorithm: The value of V7CENTER is the same as CENTER unless the ARIC study participant has relocated geographically and moved into another field center at visit 7. In that instance, the value of V7CENTER is the value of the field center where the participant was seen.

2.5 V7DATE71_ FollowUpDays (Days of follow up from visit 1 to V7Stage 1 exam date)

Description: The number of days between visit 1 and date of the participant's visit 7 exam. The visit 7 exam date is the earlier of the date from the Anthropometry form (ANT) or the date from the Sitting Blood Pressure form (SBP). In the instance where one of those two form dates is missing, the other non-missing date is used.

Type: Numeric

Algorithm: If STAGE_1_COMPLETE=1 then do;
V7DATE71_FollowUpDays=SBP0a - visit 1 date;
If SBP0a=missing then V7DATE71_FollowUpDays=BIO0a - visit 1 date;
Else if BIO0a=missing the V7DATE71_FollowUpDays=ANT0a - visit 1 date;
End;

Source variable(s): STAGE_1_COMPLETE, ANT0a, BIO0a, SBP0a

2.6 V7DATE71_ year (Year of V7 Stage 1 exam date)

Description: Year of the participant's visit 7 exam. The visit 7 exam date is the earlier of the date from the Anthropometry form (ANT) or the date from the Sitting Blood Pressure form (SBP). In the instance where one of those two form dates is missing, the other non-missing date is used.

Type: Numeric

Algorithm: If STAGE_1_COMPLETE=1 then do;
V7DATE71_year=year of SBP0a;
If SBP0a=missing then V7DATE71_year=year of BIO0a;
Else if BIO0a=missing the V7DATE71_year=year of ANT0a;
End;

Source variable(s): STAGE_1_COMPLETE, ANT0a, BIO0a, SBP0a

2.7 RES_OTH (Restrictions on Other Procedures)

Description: The derived informed consent file, ICTDER05, includes information and dates of final consents for ARIC participants. Change in consent status is recorded in ARIC follow-up and visit 7 using the ICT form. RES_OTH indicates the types of restriction on other procedures. We

request that the investigators exclude appropriate records with partial restrictions prior to data analysis.

Type: Character; length: \$130.

Algorithm: if ICT3=1 and ICT4=1 and ICT7=1 then res_OTH='Full Consent';
else if ICT3=1 and ICT4=1 and (ICT7=0 or missing(ICT7)) then
res_OTH='Not for Profit';
else if ICT3=1 and ICT4=0 then res_OTH='ARIC Only';
else if ICT3=0 and ICT4=0 then resOTH='No Consent';

Source variable(s): ICT3, ICT4, ICT7

2.8 RES_DNA (Restrictions on DNA Usage)

Description: The derived informed consent file, ICTDER05, includes information and dates of final consents for ARIC participants. Change in consent status is recorded in ARIC follow-up and visit 7 using the ICT form. The variable RES_DNA indicates the type of restriction on DNA use. We request that the investigators exclude appropriate records with partial restrictions prior to data analysis.

Type: Character; length: \$130.

Algorithm: if ICT5=1 and ICT6=1 and ICT7=1 then RES_DNA='Full Consent';
else if ICT5=1 and ICT6=1 and (ICT7=0 or missing(ICT7)) then
RES_DNA='Not for Profit';
else if ICT5=1 and ICT6=0 then RES_DNA='ARIC Only';
else if ICT5=0 and ICT6=0 then RES_DNA='No use/storage DNA';

Source variable(s): ICT5, ICT6, ICT7

2.9 LASTFUINTERVIEW_DAT_FollowUpDays (Days of follow up from visit 1 to Date of last completed follow-up interview)

Description: The number of days between visit 1 and the date of the participant's last completed follow-up interview where an actual contact was made, prior to November 15, 2019.

Type: Numeric

Algorithm: Days between visit 1 and the max value of AFUcomp1_A in the composite follow-up dataset among the records for a single ID where AFUcomp2_A indicates that the interview was accomplished

(AFUcomp2_A in ('A','C','D')) and the date preceded November 15, 2019.

Source variable(s): AFUcomp1_A, AFUcomp2_A

2.10 LASTFUINTERVIEW_DAT_year (Year of Date of last completed follow-up interview)

Description: Year of the participant's last completed follow-up interview where an actual contact was made, prior to November 15, 2019.

Type: Numeric

Algorithm: Year of the max value of AFUcomp1_A in the composite follow-up dataset among the records for a single ID where AFUcomp2_A indicates that the interview was accomplished (AFUcomp2_A in ('A','C','D')) and the date preceded November 15, 2019.

Source variable(s): AFUcomp1_A, AFUcomp2_A

2.11 STAGE_1_TYPE (V7 Type of Stage 1 Exam)

Description: Categorical variable that describes the participant's type of Stage 1 exam.

Format: A=Full, B=Abbreviated, C=Home, D=Long Term Care Facility.

Type: Character; length=\$1.

Algorithm: STAGE_1_TYPE=RTS17

Source variable(s): RTS17

3. SOCIO-DEMOGRAPHIC

3.1 GENDER (Sex)

Description: Categorical variable that describes the participant's gender: M=Male, F=Female.

Type: Character; length=\$1.

Algorithm: GENDER=GENDER from DERIVE13

Source variable(s): [DERIVE13] GENDER

3.2 GENDER71 (Corrected Gender (V1CORGE1))

Description: Categorical variable that describes the participant's gender: M=Male, F=Female. Incorrect values for the variable GENDER were identified following the initial data collection on the ARIC cohort. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (GENDER) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and should be decided by the Investigator.

Type: Character; length=\$1.

Algorithm: GENDER71=V1CORGE1

Source variable(s): V1CORGE1

3.3 RACEGRP (Race)

Description: Categorical variable which describes the participant's race: A=Asian, B=Black, I=Native American, W=White.

Type: Character; length=\$1.

Algorithm: RACEGRP=RACEGRP from DERIVE13

Source variable(s): [DERIVE13] RACEGRP

3.4 RACEGRP71 (Corrected Race (V1CORRA1))

Description: Categorical variable which describes the participant's race: A=Asian, B=Black, I=Native American, W=White. Incorrect values for the variable RACEGRP were identified following the initial data collection on the ARIC cohort. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (RACEGRP) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and should be decided by the Investigator.

Type: Character; length=\$1.

Algorithm: RACEGRP71=V1CORRA1

Source variable(s): V1CORRA1

3.5 V7AGE71 (Visit 7 Age)

Description: Participant's age at the time of the visit 7 exam calculated from the BIRTHDAT variable.

Type: Numeric

Algorithm: If V7DATE71>.z and BIRTHDAT>.z then V7AGE71 = floor((intck('month', BIRTHDAT,V7DATE71)-(day(V7DATE71) < day(BIRTHDAT)))/12);

Source variable(s): BIRTHDAT (Date of Birth), V7DATE71

3.6 V7AGE72 (Corrected Visit 7 Age)

Description: Participant's age at the time of the visit 7 exam calculated from the BIRTHDAT71 variable. This variable is based on the corrected birthdate. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (V7AGE71) for Visit 1 and longitudinal analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and should be decided by the Investigator.

Type: Numeric

Algorithm: If V7DATE71>.z and BIRTHDAT71>.z then V7AGE72 = floor((intck('month', BIRTHDAT71,V7DATE71)-(day(V7DATE71) < day(BIRTHDAT71)))/12);

Source variable(s): BIRTHDAT71 (Corrected Birthdate), V7DATE71

4. ANTHROPOMETRY AND BLOOD PRESSURE

4.1 BMI71 (V7 Body Mass Index in kg/m²)

Description: Body mass index [Weight (kg)] / [Height (cm) / 100]²

Type: Numeric

Algorithm: If missing (V6IN129) or missing (ANT4) then BMI71=missing;
Else BMI71= ANT4/(V6IN129/100)²

Source variable(s): V6IN129 (Last Measured Height in CM), ANT4

4.2 WSTHPR71 (V7 Waist-to-Hip Ratio)

Description: Ratio of waist girth to hip girth

Type: Numeric

Algorithm: If missing(ANT10a) or missing(ANT10b) or ANT10b=0 then
WSTHPR71=missing
Else WSTHPR71=(ANT10a/ANT10b)

Source variable(s): ANT10a, ANT10b

4.3 SYSTOLIC71 (V7 Mean Systolic BP of 2nd and 3rd Measurements)

Description: Mean of 2nd and 3rd systolic blood pressure measurements, consistent with V1 through V6

Type: Numeric

Algorithm: SYSTOLIC71=mean of SBP8 and SBP11
If SYSTOLIC71=missing then SYSTOLIC71=SBP14

Source variable(s): SBP8, SBP11, SBP14

4.4 DIASTOLIC71 (V7 Mean Diastolic BP of 2nd and 3rd Measurements)

Description: Mean of 2nd and 3rd diastolic blood pressure measurements, consistent with V1 through V6

Type: Numeric

Algorithm: DIASTOLIC71=mean of SBP9 and SBP12
 If DIASTOLIC71=missing then DIASTOLIC71=SBP15

Source variable(s): SBP9, SBP12, SBP15

4.5 PULSE71 (V7 Mean Pulse of 2nd and 3rd Measurements)

Description: Mean of 2nd and 3rd pulse measurements, consistent with V1 through V6

Type: Numeric

Algorithm: PULSE71=mean of SBP10 and SBP13
 If PULSE71=missing then PULSE71=SBP16

Source variable(s): SBP10, SBP13, SBP16

5. ALCOHOL USE

5.1 DRNKR71 (V7 Drinker Status)

Format: 1=Current Drinker
2=Former Drinker
3=Never Drinker
4=Unknown

Type: Numeric

Algorithm: Use the 1st not-permanently missing occurrence of ALC form if more than one.
If ALC2 in ('Y', missing) and ALC3= 'Y' then DRNKR71=1;
Else if (ALC2= 'Y' and ALC3= 'N') then DRNKR71=2;
Else if (ALC2= 'N' and ALC3 in ('N', missing)) then DRNKR71=3;
Else if (ALC2=missing and ALC3= 'N') or (ALC2= 'Y' and ALC3=missing) then DRNKR71=4;
Else DRNKR71=missing.

Source variable(s): ALC2, ALC3

5.2 ETHANL71 (V7 Usual Ethanol Intake (g/wk))

Format: continuous variable

Type: Numeric

Algorithm: Use the 1st not-permanently missing occurrence of ALC form if more than one.
If (DRNKR71 in (2, 3) or ALC3='N') then ETHANL71=0;
Else if (DRNKR71 in (4, missing) and missing(ALC5a) and missing(ALC6a) and missing(ALC7a)) then ETHANL71=missing;
Else ETHANL71=(ALC5a x 10.8) + (ALC6a x 13.2) + (ALC7a x 15.1).

Source variable(s): ALC3, ALC5a, ALC6a, ALC7a, DRNKR71

5.3 CURDRK71 (V7 Current Drinker)

Format: 0=No,
1=Yes,
.T=missing (keeping .T for historical purposes).

Type: Numeric

Algorithm: Use the first not-permanently missing occurrence of ALC form if more than one.
If (ALC2 in ('Y', missing) and ALC3='Y') then CURDRK71=1;
Else if ALC3='N' or (ALC2='N' and ALC3=missing) then CURDRK71=0;
Else CURDRK71=.T

Source variable(s): ALC2, ALC3

5.4 FORDRK71 (V7 Former Drinker)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: Use the first not-permanently missing occurrence of ALC form if more than one.
If (ALC2= 'Y' and ALC3='N') then FORDRK71=1;
Else if (ALC2 in ('Y', missing) and ALC3= 'Y') or (ALC2= 'N' and ALC3 in ('N', missing)) then FORDRK71=0;
Else FORDRK71=.T

Source variable(s): ALC2, ALC3

5.5 EVRDRK71 (V7 Ever Drinker)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: Use the first not-permanently missing occurrence of ALC form if more than one.
If ALC2= 'Y' or (ALC2=missing and ALC3= 'Y') then EVRDRK71=1;
Else if (ALC2= 'N' and ALC3 in ('N', missing)) then EVRDRK71=0;
Else EVRDRK71=.T

Source variable(s): ALC2, ALC3

6. SMOKING

The following definition is a temporary variable used in the algorithms of the smoking derived variables and not found on the DERIVE71 dataset.

Temporary V6V7SMOKECIG (Temporary Variable: AFU Cigarette Smoker)

Description: derived from composite (AFU) dataset

Algorithm: =1 if any AFUcomp30_G="Y" and AFUcomp1_A is between V6DATE61 and V7DATE71
=0 if no AFUcomp30_G="Y" and at least one AFUcomp30_G='N' and AFUcomp1_A is between V6DATE61 and V7DATE71
=missing if all AFUcomp30_G is missing or if V6DATE61 and/or V7DATE71 is missing

The cigarette smoking variables combine responses from the ARIC visit ALC form and ARIC follow-up data.

6.1 CURSMK72 (V7 Current cigarette smoker)

Format: 0=No,
1=Yes,
.T=missing

Type: Numeric

Algorithm: If ALC1= 'Y' then CURSMK72 = 1
Else if ALC1= 'N' then CURSMK72 = 0
Else if ALC1=missing then CURSMK72 = .T

Source variable(s): ALC1

6.2 FORSMK72 (V7 Former cigarette smoker)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If CURSMK72=0 and (CIGT41 in (1 2) OR CIGT52 in (1 2) OR CIGT62 in (1 2) OR V6V7SMOKECIG=1) then FORSMK72=1

Else if CURSMK72=1 OR (CURSMK72=0 AND CIGT41=3 AND CIGT52=3 AND CIGT62=3 AND V6V7SMOKECIG=0) then FORSMK72=0

Else if (CURSMK72=. and (CIGT41 in (1 2) OR CIGT52 in (1 2) OR CIGT62 in (1 2) OR V6V7SMOKECIG=1)) OR (CURSMK72=0 and (CIGT41=missing AND CIGT52=missing AND CIGT62=missing AND V6V7SMOKECIG=missing)) then FORSMK72=.T

Else if ALL variables CURSMK72, CIGT41, CIGT52, CIGT62, AND V6V7SMOKECIG are missing then FORSMK72=.

Source variable(s): CURSMK72, CIGT41, CIGT52, CIGT62, V6V7SMOKECIG

6.3 EVRSMK72 (V7 Ever Smoked cigarettes)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (CURSMK72=1 OR CIGT41 in (1 2) OR CIGT52 in (1 2) OR CIGT62 in (1 2) OR V6V7SMOKECIG=1) then EVRSMK72=1

Else if (CURSMK72=0 AND CIGT41=3 AND CIGT52=3 AND CIGT62=3 AND V6V7SMOKECIG=0) then EVRSMK72=0

Else if (CURSMK72=0 AND CIGT41 NOT IN (1 2) AND CIGT52 NOT IN (1 2) AND CIGT62 NOT IN (1 2) AND V6V7SMOKECIG= missing) OR

(CURSMK72=0 AND CIGT41=missing AND CIGT52=missing AND CIGT62=missing AND V6V7SMOKECIG NE 1)

OR

(CURSMK72=missing AND CIGT41=missing AND CIGT52=missing AND CIGT62=missing AND V6V7SMOKECIG=0)

OR

(CURSMK72=missing AND CIGT41=3 AND CIGT52=3 AND CIGT62=3 AND V6V7SMOKECIG NE 1) then EVRSMK72=.T;

Else if ALL variables CURSMK72, CIGT41, CIGT52, CIGT62, AND V6V7SMOKECIG are missing then EVRSMK72=.

Source variable(s): CURSMK72, CIGT41, CIGT52, CIGT62, V6V7SMOKECIG

6.4 CIGT72 (V7 Cigarette Smoking Status)

Format: 1=Current smoker,
2=Former smoker,
3=Never smoker,
4=Unknown, but one of the above categories may be ruled out
. =missing.

Type: Numeric

Algorithm: If CURSMK72=1 then CIGT72=1
Else if CURSMK72=0 and (CIGT41 in (1 2) OR CIGT52 in (1 2) OR CIGT62 in (1 2) OR V6V7SMOKECIG=1) then CIGT72=2
Else if CURSMK72=0 and (CIGT41=3 AND CIGT52=3 AND CIGT62=3 AND V6V7SMOKECIG=0) then CIGT72=3
Else if (CURSMK72=. and (CIGT41 in (1 2) OR CIGT52 in (1 2) OR CIGT62 in (1 2) OR V6V7SMOKECIG=1)) OR (CURSMK72=0 and (CIGT41=missing AND CIGT52=missing AND CIGT62=missing AND V6V7SMOKECIG=missing)) then CIGT72=4
Else if ALL variables CURSMK72, CIGT41, CIGT52, CIGT62, AND V6V7SMOKECIG are missing then CIGT72=.

Source variable(s): CURSMK72, CIGT41, CIGT52, CIGT62, V6V7SMOKECIG

7. DISEASE PREVALENCE

There are a number of variables in the Disease Prevalence section that utilize cohort surveillance information, through event year 2019, to derive disease prevalence. Event year 2019 is closed. All derived variables using surveillance data are considered final.

Diabetes Prevalence Variables

Temporary variables were created for use in the algorithms of the following diabetes-derived variables. They are not found on the DERIVE71 dataset.

Temporary MDDX_DIAB71

Algorithm: MDDX_DIAB71=1 if a participant reported being diagnosed during ARIC Follow-Up interviews with diabetes prior to the visit 7 data (V7DATE71). The composite dataset variables considered are AFUCOMP1_A, AFUCOMP7D_G, and AFUCOMP15_M.

Temporary INCSELFREPDM71

Algorithm: If any of the records for a single ID have a 'Y' value for either AFUcomp7d_G or AFUcomp15_M and .z<afucomp1_A<="15NOV2019"d then INCSELFREPDM71 = 1;

Else if AFUcomp7d_G, AFUcomp15_M are (N,") or ("N) respectively in all records for a single ID, where .z<afucomp1_A<="15NOV2019"d then INCSELFREPDM71 = 0;

Else INCSELFREPDM71 = .;

7.1 DIABTS73 (V7 Diabetes - Lower Cutpoint 140 mg/dL)

Description: Diabetes variable defined as present if glucose value \geq 140 or non-fasting glucose value \geq 200 or using medication for diabetes or self-report diagnosis of diabetes.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (BIO7a = 'Y' and chem5>=140) or (BIO7a ne 'Y' and chem5>=200) or (MSR2 ne 'T' and MSR33c = 'Y') or MDDX_DIAB71=1 then DIABTS73=1;

Else if (.z<chem5< 140) and MDDX_DIAB71 ne 1 and MSR33c ne 'Y' then DIABTS73=0;

Else DIABTS73=.T;

Source variable(s): BIO7a, CHEM5, MDDX_DIAB71, MSR2, MSR33c

7.2 DIABTS74 (V7 Diabetes - Lower Cutpoint 126 mg/dL)

Description: Diabetes variable defined as present if glucose value>=126 or non-fasting glucose value>=200 or using medication for diabetes or self-report diagnosis of diabetes.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (BIO7a = 'Y' and chem5>=126) or (BIO7a ne 'Y' and chem5>=200) or (MSR2 ne 'T' and MSR33c = 'Y') or MDDX_DIAB71=1 then DIABTS74=1;

Else if (.z<chem5< 126) and MDDX_DIAB71 ne 1 and MSR33c ne 'Y' then DIABTS74=0;

Else DIABTS74=.T;

Source variable(s): BIO7a, CHEM5, MDDX_DIAB71, MSR2, MSR33c

7.3 DIABTS75 (V7 Diabetes Lab and Meds Only - Lower Cutpoint 126 mg/dL)

Description: Diabetes variable defined as present if glucose value>=126 or non-fasting glucose value>=200 or using medication for diabetes.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (BIO7a = 'Y' and chem5>=126) or (BIO7a ne 'Y' and chem5>=200) or (MSR2 ne 'T' and MSR33c = 'Y') then DIABTS75=1;
Else if (.z<chem5< 126) and MSR33c ne 'Y' then DIABTS75=0;
Else DIABTS75=.T;

Source variable(s): BIO7a, CHEM5, MSR2, MSR33c

7.4 DIABTS76 (V7 Diabetes – Hemoglobin A1C, cutpoint 6.5%)

Description: Diabetes variable defined as present if hemoglobin A1C value>=6.5 % or using medication for diabetes or self-report diagnosis of diabetes.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (CHEM1>=6.5) or (MSR2 ne 'T' and MSR33c = 'Y') or MDDX_DIAB71=1 then DIABTS76=1;
Else if (.z< CHEM1<6.5) and MDDX_DIAB71 ne 1 and MSR33c ne 'Y' then DIABTS76 =0;
Else DIABTS76=.T ;

Source variable(s): CHEM1, MDDX_DIAB71, MSR2, MSR33c

7.5 DIABTS77 (V7 Diabetes (DM medications or DM reported on AFU))

Description: Diabetes variable defined as present if participant is using medication for diabetes or self-report diagnosis of diabetes.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (MSR2 ^= 'T' and MSR33c='Y') or INCSELFREPDM71=1 or DIABMDCODE71=1 then DIABTS77=1
Else if INCSELFREPDM71 ^= 1 and MSR33c ^= 'Y' and DIABMDCODE71 ^= 1 then DIABTS77=0

Else DIABTS77=.T

Source variable(s): MSR2, MSR33c, INCSELFREPDM71, DIABMDCODE71

Myocardial Infarction (MI) Prevalence Variables

7.6 MDDXMI72 (V7 MD Diagnosed Myocardial Infarction)

Description: This variable is derived from ARIC Follow-Up questions that ask if the participant was told by a doctor whether or not they'd had a heart attack between visit 6 and visit 7.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (AFUCOMP7a_G = 'Y' OR AFUCOMP11a_M = 'Y') AND V6DATE61 < AFUCOMP1_A (AFU DATE) < V7DATE71 then MDDXMI72=1

Else if all values of (AFUCOMP7a_G, AFUCOMP11a_M) for records between visit 6 date and visit 7 date are one of the following combinations (" ,U), (" ,"), (U,") then MDDXMI72=.T

Else MDDXMI72=0

Source variable(s): AFUCOMP7a_G, AFUCOMP11a_M, V6DATE61, V7DATE71, AFUCOMP1_A

7.7 HXOFMI72 (V7 History of Myocardial Infarction)

Description: This variable is derived from ARIC Follow-Up questions that ask if the participant was told by a doctor whether or not they'd had a heart attack as well as questions asking the participant if they'd been hospitalized for heart attack. The follow-up records from the ARIC Follow-Up composite dataset considered for this variable were collected before the end of V7 data collection (15NOV2019).

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If MDDXMI72=1 or (AFUcomp7_V1= 'Y') or (AFUcomp30_deceased_A='Y') or (AFUcomp30non_deceased_A='Y') then HXOFMI72=1

Else if over all records for a single ID the following value combinations are found for (MDDXMI72, AFUcomp7_V1, AFUcomp30_deceased_A, AFUcomp30non_deceased_A): (.T,"",""), (.T,"','U','"), (.T,"','U') then HXOFMI72=.T

Else HXOFMI72=0

Source variable(s): MDDXMI72, AFUCOMP7_V1, AFUCOMP30_deceased_A, AFUcomp30non_deceased_A

Coronary Heart Disease (CHD) Prevalence Variables

7.8 PRVCHD71 (V7 Prevalent CHD before Visit 7)

Description: This variable is derived from the baseline status of CHD (PRVCHD05) and the closed event years of ARIC Cohort Surveillance data through 2019, where the events occurred prior to the participant's Visit 7.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If PRVCHD05=1 or (C7_IN_19SP=1 and .<C7_DATEISP< V7DATE71) or (C7_IN_19SP=1 and V7DATE71=. and C7_DATEISP<=) then PRVCHD71= 1

Else if PRVCHD05=0 and ((C7_IN_19SP=0 or C7_DATEISP>= V7DATE71>.) or (V7DATE71=. And C7_DATEISP>"15NOV2019"d)) then PRVCHD71= 0

Else PRVCHD71=.T

Source variable(s): PRVCHD05, C7_IN_19SP, C7_DATEISP, V7DATE71

7.9 PRVCHD73 (V7 Prevalent CHD by end of Visit 7)

Description: This variable is derived from the baseline status of CHD (PRVCHD05) and the closed event years of ARIC Cohort Surveillance data through

2019, where the events occurred prior to the end of V7 data collection (15NOV2019).

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If PRVCHD05=1 or (C7_IN_19SP=1 and
.<C7_DATEISP<="15NOV2019"d) then PRVCHD73= 1

Else if PRVCHD05=0 and (C7_IN_19SP=0 or
C7_DATEISP>"15NOV2019"d) then PRVCHD73= 0

Else PRVCHD73=.T

Source variable(s): PRVCHD05, C7_IN_19SP, C7_DATEISP

7.10 PRVCHD74 (V7 Prevalent CHD - unverified)

Description: This variable is derived from self-reported ARIC Follow-Up data including questions on doctor told participant about heart attack, coronary bypass, and coronary angioplasty on records collected up through the end of V7 data collection (15NOV2019).

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: use AFUcomp: only for those records where .z < AFUcomp1_A <=
'15NOV2019'd

If MDDXMI72=1 or (AFUcomp13a_G='Y') or (AFUcomp15a_G='Y')
then PRVCHD74=1

Else if over all records for a single ID the following value combinations
are found for (MDDXMI72, AFUcomp13a_G, AFUcomp15a_G):(.M or
,), (" or 'U'), (" or 'U')) then PRVCHD74=.

Else PRVCHD74=0

Source variable(s): AFUcomp1_A, MDDXMI72, AFUcomp13a_G, AFUcomp15a_G

Stroke Prevalence Variables

7.11 PRVSTR71 (V7 Prevalent Stroke by the end of Visit 7)

Description: This variable is derived from the baseline status of stroke (HOM10D) and the closed event years of ARIC Surveillance data on the cohort through 2019, where the events occurred prior to the end of V7 data collection (15NOV2019).

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: PRVSTR71 = 1, If HOM10D=1 or (C7_IN19DP=1 and
. < C7_ED19DP <= V7DATE71) or (C7_IN19DP=1 and V7DATE71=.
and C7_ED19DP <= "15NOV2019")

PRVSTR71 = 0, if HOM10D=0 and ((C7_IN19DP=0 or
C7_ED19DP > V7DATE71 >.) or (V7DATE71=. and C7_ED19DP >
"15NOV2019"))

Else PRVSTR71 = .T

Source variable(s): HOM10D, C7_IN19DP, C7_ED19DP, V7DATE71

7.12 PRVSTR72 (V7 Prevalent Stroke-unverified)

Description: This variable is derived from self-reported ARIC Follow-Up data including questions that doctor told participant about stroke or TIA or participant hospitalized for stroke on records collected up through the end of V7 data collection (15NOV2019).

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If any record within a single ID has a "Y" value is found either
AFUcomp29_A or AFUcomp8b_K then PRVSTR72=1
Else if over all records within a single ID the following value
combinations are found for (AFUcomp29_A, AFUcomp8b_K): (","),
(",U), (U,") then PRVSTR72=missing

Else PRVSTR72=0

Source variable(s): AFUcomp29_A, AFUcomp8b_K

Hypertension Prevalence Variables

7.13 HYPERT74 (V7 Hypertension, definition 4 (DIASTOLIC71 GE 90 or HTN med))

Description: Hypertension definition defined as diastolic blood pressure (mean of 2nd and 3rd measures) ≥ 90 or medication is being taken for high blood pressure.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (DIASTOLIC71 ≥ 90) or (MSR2 ne 'T' and MSR33d='Y') then HYPERT74=1;

Else if (0<DIASTOLIC71 <90) and (MSR33d='N' or (MSR33d=missing and MSR2='T')) then HYPERT74=0;

Else HYPERT74= .T ;

Source variable(s): DIASTOLIC71, MSR2, MSR33d

7.14 HYPERT75 (V7 Hypertension, definition 5 (SYSTOLIC71 GE 140 or DIASTOLIC71 GE 90 or HTN medication))

Description: Hypertension is defined as systolic blood pressure (mean of 2nd and 3rd measures) ≥ 140 or diastolic blood pressure (mean of 2nd and 3rd measures) ≥ 90 or medication is being taken for high blood pressure.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (DIASTOLIC71 ≥ 90) or (SYSTOLIC71 ≥ 140) or (MSR2 ^= 'T' and MSR33d = 'Y') then HYPERT75 = 1

Else if (0 < DIASTOLIC71 < 90) and (0 < SYSTOLIC71 < 140) and (MSR33d = 'N' or (MSR33d = missing and MSR2 = 'T')) then
HYPERT75 = 0

Else HYPERT75 = .T

Source variable(s): DIASTOLIC71, SYSTOLIC71, MSR2, MSR33d

7.15 HYPERT76 (V7 Hypertension, definition 6 (SYSTOLIC71 GE 160 or DIASTOLIC71 GE 95 or HTN medication))

Description: Hypertension is defined as systolic blood pressure (mean of 2nd and 3rd measures) >=160 or diastolic blood pressure (mean of 2nd and 3rd measures) >=95 or medication is being taken for high blood pressure.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (DIASTOLIC71 >= 95) or (SYSTOLIC71 >= 160) or (MSR2 ^= 'T' and MSR33d = 'Y') then HYPERT76 = 1

Else if (0 < DIASTOLIC71 < 95) and (0 < SYSTOLIC71 < 160) and (MSR33d = 'N' or (MSR33d = missing and MSR2 = 'T')) then
HYPERT76 = 0

Else HYPERT76 = .T

Source variable(s): DIASTOLIC71, SYSTOLIC71, MSR2, MSR33d

7.16 HYPERT77 (V7 Hypertension, definition 7 (SYSTOLIC71 GE 150 or DIASTOLIC71 GE 90 or HTN medication))

Description: Hypertension is defined as systolic blood pressure (mean of 2nd and 3rd measures) >=150 or diastolic blood pressure (mean of 2nd and 3rd measures) >=90 or medication is being taken for high blood pressure.

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (DIASTOLIC71 >= 90) or (SYSTOLIC71 >= 150) or (MSR2 ^= 'T' and MSR33d = 'Y') then HYPERT77 = 1

Else if (0 < DIASTOLIC71 < 90) and (0 < SYSTOLIC71 < 150) and (MSR33d = 'N' or (MSR33d = missing and MSR2 = 'T')) then HYPERT77 = 0

Else HYPERT77 = .T

Source variable(s): DIASTOLIC71, SYSTOLIC71, MSR2, MSR33d

Heart Failure (HF) Prevalence Variables

The heart failure (HF) variables included in this derived variable dictionary define HF prevalence at Visit 7. In general, the Definite HF variable will be most specific for prevalent HF, while the Definite or Possible HF variable will be the most sensitive. The appropriate variable for any given analysis will therefore depend on the balance between the sensitivity and specificity necessary for that analysis.

When conducting analyses of incident HF, it is important to note that the incident HF variable is available in the ARIC Cohort Surveillance dataset. The variable C7_INCHF19 uses V1 as the baseline and considers an event as a hospitalization with an ICD-9 discharge diagnosis code of 428.x in any position or corresponding ICD-10 code.

More detailed analysis recommendations from the ARIC Heart Failure Committee are available in the ARIC Analysis Manual (Manual 30).

The following definitions are temporary variables for use in the algorithms of the heart failure prevalence derived variables and are not included in DERIVE71.

Temporary HospHF_2005onward

Algorithm: For HFC19OCC1 records where
01JAN2005<=HFEVTDAT<V7DATE71
HospHF_2005onward=1, if CHF DIAG in ('A' 'B' 'C') for any record for SubjectID
HospHF_2005onward=0, otherwise

Temporary OnsetDate

Algorithm: Using data from the most recent PHF and PHFphi datasets and PHFA1104
If PHF2c is not missing, OnsetDate=PHF2c
Else if PHF7 is not missing, OnsetDate=PHF7
Else if PHFA2c is not missing, OnsetDate=PHFA2c
Else if PHFA7 is not missing, OnsetDate=PHFA7
Else if PHF0a is not missing, OnsetDate=PHF0a

Else if ENTRY_DA is not missing, OnsetDate=ENRTY_DA

Temporary HF_byPHF

Algorithm: Where missing<OnsetDate<V7DATE71
HF_byPHF=1, if phf1='Y' or phfa1='Y'
HF_byPHF=0, otherwise
Keep last record for each SubjectID only after sorted by SubjectID,
HF_byPHF, and OnsetDate

Temporary HF_first428_pre2005

Algorithm: Using C18CELB1 records where missing<CELB04<01JAN2005
HF_first428_pre2005=1, if ICD code in first position (CELB10a) is
428.x for any record per SubjectID
HF_first428_pre2005=0, otherwise

Temporary HF_non1st428_pre2005

Algorithm: Using C18CELB1 records where missing<CELB04<01JAN2005
HF_non1st428_pre2005=1, if ICD code is 428.x anywhere but the first
position (CELB10b-CELB10z) for any record for the SubjectID
HF_non1st428_pre2005=0, otherwise

Temporary srHF/srHFdt/Form

Algorithm: For [v3]phxa04, srHF=phxa8j, srHFdt=phxa63, Form=NULL
For [v4]phxb04, srHF=phxb6b, srHFdt=phxb21, Form=NULL
For afu&y1104new (y=g, h, i, j, k), srHF=afu&y7b, srHFdt=afu&y1,
Form=NULL

For afu&y1104new (y=l, m),
srHF='Y' if afu&y7b, afu&y8, afu&y9, or afu&y10 is 'Y';
else srHF='N' if afu&y7, afu&y8, afu&y9, or afu&y10 is 'N'.
srHFdt=adu&y1 if not missing; else srHFdt=ENTRY_DA
Form=NULL

For afu_&mrt, &mrt=most recent data pull,
srHF='Y' if afu30 or afu31 is 'Y';
else srHF='N' if afu30 or afu31 is 'N'.
srHFdt=AFU0a if not missing;
else srHFdt=DATESTAMPINITIAL_AFU
Form=NULL

For saf_&mrt, &mrt=most recent data pull,
srHF='Y' if saf4, saf4a, saf5, or saf5a is 'Y';
else srHF='N' if saf4, saf4a, saf5, or saf5a is 'N'.
srHFdt=saf0a if not missing;
else srHFdt=DATESTAMPINITIAL_SAF
Form=NULL

For phfa1104, srHF=phfa1, Form=form
srHFdt is first completed date from the list phfa7, phfa9, ENTRY_DA

For phf_&mrt, &mrt=most recent data pull,
srHF=phf1, Form=form
srHFdt is first completed date from the list phf7, phf9,
DATESTAMPINITIAL_PHF

Keep only records where srHF is 'Y' or 'N'

Temporary selfreportHF

Algorithm: From previous temporary dataset, sort by SubjectID, srHFDT, srHF
Keep records where missing<srHFdt<=v7date71 OR Form='PHF'

Start with selfreport=0 for first record per SubjectID then
Selfreport=1, if srHF='Y';
Selfreport=0, if srHF='Y' is followed by a record with srHF='N' and
form='PHF'

Last record is kept for each SubjectID

Temporary srHFmed/srHFmedDt

Algorithm: %macro selfreportHFmeds(dsn, medDt, med)
If &med='Y' then do;
srHFmed=1;
srHFmedDt=&medDt;
%mend;
%selfreportHFmeds(v1.msra, MSRA11, msra08d);
%selfreportHFmeds(v2.msrb, MSRB27, msrb24d);
%selfreportHFmeds(v3.msra04, MSRC29, msra04e);
%selfreportHFmeds(v4.msrd04, MSRD31, msrd24e);
%selfreportHFmeds(v5.msr, MSRF0A, msrf33h);
%selfreportHFmeds(v6.msr, MSRF0A, msrf33h);
%selfreportHFmeds(v7.msr, MSR0A, MSR33h);
%selfreportHFmeds(postv4.afu1104new, AFUL1, AFUL46D);
%selfreportHFmeds(postv4.afum1104new, AFUM1, AFUM46D);
%selfreportHFmeds(afu.afu_180425, AFU0a, AFU65D);

Temporary selfreportHFmeds

Algorithm: Keep records where missing<srHFmedDT<V7DATE71
selfreportHFmeds=1, if srHFmed=1 for any record;
selfreportHFmeds=0, otherwise

7.17 PREVDEFHF71 (V7 Prevalent Definite Heart Failure for Closed Event Years)

Description: A participant is defined to have prevalent definite heart failure if at least one of the following is true: (1) Prior hospitalization (01/01/2005

onward but before V7 visit) classified as Definite (A), Probable (B), or Chronic (C) HF; OR (2) Physician Heart Failure (PHF) Survey with HF onset date prior to V7 (from those with self-reported HF) in which the physician answers YES to "has this patient ever had HF or CM?"; OR (3) Hospitalization with an ICD code 428.x in first position (before 01/01/2005)

Format: 0=No,
1=Yes,
. =missing.

Algorithm:

1. Prior hospitalization (01/01/2005 onward but before V7 visit) classified as Definite (A), Probable (B), or Chronic (C) HF
2. Physician Heart Failure (PHF) Survey with HF onset date prior to V7 (from those with self-reported HF) in which the physician answers YES to "has this patient ever had HF or CM?"
3. Hospitalization with an ICD code 428.x in first position (before 01/01/2005)

Using Temporary Variables:
If V7DATE71 is not missing AND (HospHF_2005onward=1 OR HF_byPHF=1 OR HF_first428_pre2005=1) then PREVDEFHF71=1
Else PREVDEFHF71=0

Source variables: V7DATE71, HospHF_2005onward, HF_byPHF, HF_first428_pre2005

7.18 PREVDEFPOSSH71 (V7 Prevalent Definite OR Possible Heart Failure for Closed Event Years)

Description: A participant is defined to have prevalent definite OR possible heart failure if at least one of the following is true: (1) Prior hospitalization (01/01/2005 onward but before V7 visit) classified as Definite (A), Probable (B), or Chronic (C) HF; OR (2) Physician Heart Failure Survey with HF onset date prior to V7 (from those with self-reported HF) in which the physician answers YES to "has this patient ever had HF or CM?"; OR (3) Hospitalization with an ICD code 428.x in first position (before 01/01/2005); OR (4) Hospitalization with an ICD code 428.x in any position other than the first position (any time before 01/01/2005); OR (5) Self-report of HF at AFU prior to V7 or at visits 3-4*, not refuted by the physicians health survey (temporal association will need to be considered); OR (6) Self-report of treatment for HF from any study visit or AFU prior to V7. *Note that self-reported HF was only asked at V3 and V4.

Format: 0=No,
1=Yes,
. =missing.

- Algorithm:
1. Prior hospitalization (01/01/2005 onward but before V7 visit) classified as Definite (A), Probable (B), or Chronic (C) HF
 2. Physician Heart Failure Survey with HF onset date prior to V7 (from those with self-reported HF) in which the physician answers YES to "has this patient ever had HF or CM?"
 3. Hospitalization with an ICD code 428.x in first position (before 01/01/2005)
 4. Hospitalization with an ICD code 428.x in any position other than the first position (any time before 01/01/2005)
 5. Self-report of HF at AFU prior to V7 or at visits 3-4*, not refuted by the physicians health survey (temporal association will need to be considered)
 6. Self-report of treatment for HF from any study visit or AFU prior to V7

*Self-reported HF at V1, V2, V5, V6, V7 not asked

Using Temporary Variables:

If V7DATE71 is not missing AND (PREVDEFHF71=1 OR HF_non1st428_pre2005=1 OR selfreportHF=1 OR selfreportHFmeds=1) then PREVDEFPOSSH71=1
Else PREVDEFPOSSH71=0

Source variables: V7DATE71, PREVDEFHF71, HF_non1st428_pre2005, selfreportHF, selfreportHFmeds

8. MEDICATION USE

ARIC uses Generic Product Identifier (GPI) codes to identify use of selected medications based on data collected in the Medication Survey (MSR) form at the ARIC clinic visits. The derived medication variable definitions were reviewed following Visit 7 and resulted in new variable versions for most of the medications of interest.

For all future visits, the CC will only distribute the medication derived variables that use the new definitions. For Visits 5 - 7, the old variable versions will be retained in the updated derived datasets for reproducibility purposes, but those variables will be updated with "DO NOT USE" in the label. Analyses moving forward should only use the most recent versions of the derived medication variables.

Refer to Appendix 1 for more detailed information about the processes for defining the new definitions. The Medi-Span Therapeutic Classification list is available as a separate document.

The following definitions are temporary variables, defined here as reference for the following medication-related, derived variables. They are not found on the DERIVE71 dataset.

Temporary ALLMISS

Algorithm: Do over MSR*a_gpi where * = 5 to 29:
If any MSR*a_gpi >" then ALLMISS=0, else ALLMISS=1

Temporary MSR*a2_sub10:

Algorithm: Do over MSR*a_gpi where * = 5 to 29:
MSR*a2_sub10=substr(MSR*a_gpi,1,10)

Temporary MSR*a2_sub8:

Algorithm: Do over MSR*a_gpi where * = 5 to 29:
MSR*a2_sub8=substr(MSR*a_gpi,1,8)

Temporary MSR*a2_sub6:

Algorithm: Do over MSR*a_gpi where * = 5 to 29:
MSR*a2_sub6=substr(MSR*a_gpi,1,6)

Temporary MSR*a2_sub4:

Algorithm: Do over MSR*a_gpi where * = 5 to 29:
MSR*a2_sub4=substr(MSR*a_gpi,1,4)

Temporary MSR*a2_sub2:

Algorithm: Do over MSR*a_gpi where * = 5 to 29:
MSR*a2_sub2=substr(MSR*a_gpi,1,2)

Temporary FOUNDCHOL71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (771030,390000-399999) then
FOUNDCHOL71=1,
else FOUNDCHOL71=0.

Temporary FOUNDCHOL73:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub6 in (279930, 390000-399999, 409925, 771030,
781044) or MSR*a2_sub8 in (40100025, 81250070, 96428049,
96782839) or MSR*a2_sub10 in (9646564700, 9652504244) then
FOUNDCHOL73=1,
else FOUNDCHOL73=0.

Temporary FOUNDCHOL72:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (331000, 332000, 340000, 363000, 369920,
372000, 376000, 379900, 379910) then FOUNDCHOL72=1,
else FOUNDCHOL72=0.

Temporary FOUNDCHOL74:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub4 in (2599) or (MSR*a2_sub6 in (121030, 121045,
121085, 121099, 363000, 369920, 376000, 379900, 379910, 590700 -
594000) and MSR*a2_sub10 NOT in (1210990250)) or MSR*a2_sub8
in (12105005, 24991002, 24993002, 24995002, 33100010, 33100025,
33100040, 33100045, 33100050, 33200020, 33200021, 33200022,
33200025, 33200030, 37200010) or MSR*a2_sub10 in (2400001500,
2400001600, 2400001700, 2400003000, 2400003500, 2400003504,
2400005500) then FOUNDCHOL74=1,
else FOUNDCHOL74=0.

Temporary FOUNDHYPT71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (330000-339999 or 340000-349999 or 360000-
369999 or 370000-379999) or (MSR33d = 'Y') then
FOUNDHYPT71=1,
else FOUNDHYPT71=0.

Temporary FOUNDHYPT72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If (MSR*a2_sub6 in (330000-339999 or 340000-349999 or 360000-
369999 or 370000-379999) and (MSR*a2_sub8 NOT in (37400010)
and MSR*a2_sub6 NOT in (379920))) or MSR*a2_sub4 in (4099) or
(MSR33d = 'Y') then FOUNDHYPT72=1,
else FOUNDHYPT72=0.

Temporary FOUNDSTAT71:

Algorithm: Do over MSR*a2_sub4 where * = 5 to 29:
If MSR*a2_sub4 equal 3940 then FOUNDSTAT71=1, else
FOUNDSTAT71=0.

Temporary FOUNDSTAT72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If (MSR*a2_sub4 in (3940) and MSR*a2_sub8 NOT in (39409908)) or
MSR*a2_sub6 in (279930, 399940, 409925) or MSR*a2_sub8 in
(96428049, 96785839) then FOUNDSTAT72=1,
else FOUNDSTAT72=0.

Temporary FOUNDACOAG71:

Algorithm: Do over MSR*a2_sub2 where * = 5 to 29:
If MSR*a2_sub2 equal 83 then FOUNDACOAG71=1,
else FOUNDACOAG71=0.

Temporary FOUNDASP71:

Algorithm: Do over MSR*a2_sub4 where * = 5 to 29:
If MSR*a2_sub4 IN (6410, 6499, 6599, 6420) then FOUNDASP71=1,
else FOUNDASP71=0.

Temporary FOUNDASP72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
if MSR*a2_sub4 IN (6410) or MSR*a2_sub10 in (4399100232,
4399590415, 4399590419, 6030990225, 6499000220, 6499000221,
6499000225, 6499000320, 6499000321, 6499000340, 6499000450,
6499000460, 6499100222, 6499100330, 6599000222, 6599100430,
6599130310, 7599000210, 7599000310, 7599000320, 8515001000,
8515990220) then FOUNDASP72=1,
else FOUNDASP72=0.

Temporary FOUNDANTIANX71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (570000, 571000, 571020, 572000) then
FOUNDANTIANX71=1, else FOUNDANTIANX71=0.

Temporary FOUNDANTIANX72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29:
If MSR*a2_sub2 in (57) then FOUNDANTIANX72=1, else
FOUNDANTIANX72=0.

Temporary FOUNDANTIPSYCH71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (590000, 590700, 591000, 591500, 592000,
593000, 594000, 595000) then FOUNDANTIPSYCH71=1,
FOUNDANTIPSYCH71=0.

Temporary FOUNDANTIPSYCH72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub2 in (59) or MSR*a2_sub10 in (6200003000) then
FOUNDANTIPSYCH72=1,
else FOUNDANTIPSYCH72=0.

Temporary FOUNDHYPNOT71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (600000, 601000, 602000, 602010, 602040,
603000, 603099, 609900) then FOUNDHYPNOT71=1,
FOUNDHYPNOT71=0.

Temporary FOUNDHYPNOT72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29:
If MSR*a2_sub6 in (59) or MSR*a2_sub6 in (439935, 439940,
439959, 439966, 439968, 439975, 439988, 600000-609999) or
MSR*a2_sub8 in (41100010-41100030, 41200030, 41200040,
41400020, 41500020, 41992002, 43992002, 50200030) or
MSR*a2_sub10 in (4399300220, 4399300221, 4399300224,
4399300230, 4399300234, 4399300248, 4399300250, 4399300254,
4399300255, 4399300258, 4399300270, 4399300292, 4399300293,
4399300295, 4399300296, 4399520231-4399520234, 4399520236,
4399530310, 4399530311, 4399530313, 4399530314, 4399530317,
4399530319, 4399530320, 4399530327, 4399530354, 4399530357,
4399530390, 4399570210, 4399570220, 4399570230, 4399570243,
4399580306, 4399580308, 4399580312, 4399580315, 4399580330,
4399580332, 4399580346, 4399580348, 4399580349, 4399580350,
4399580354, 4399580361, 4399580362, 4399580363, 4399580364,
4399580367, 4399580368, 4399580376, 4399580377, 4399800426,
4399800439, 4399800470, 4399890315, 4399890325, 4399890332,
4399890335, 5030990210, 6499000280, 6599300220) then
FOUNDHYPNOT72=1, FOUNDHYPNOT72=0.

Temporary FOUNDANTICONV71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (720000, 721000, 721200) then
FOUNDANTICONV71=1, FOUNDANTICONV71=0.

Temporary FOUNDANTICONV72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub2 in (72) or MSR*a2_sub8 in (49109904, 59400015,
60100060) or MSR*a2_sub10 in (9672561675) then
FOUNDANTICONV72=1, else FOUNDANTICONV72=0.

Temporary FOUNDANTIDEM71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (620000, 620500, 620610, 620540) then
FOUNDANTIDEM71=1, FOUNDANTIDEM71=0.

Temporary FOUNDANTIDEM72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub4 in (6205) or MSR*a2_sub8 in (62000001) then
FOUNDANTIDEM72=1,
else FOUNDANTIDEM72=0.

Temporary FOUNDCNSALT71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6 in (571000, 932000, 590000, 590700, 591000,
591500, 592000, 593000, 594000, 595000, 601000, 602000, 602010)
then FOUNDCNSALT71=1, FOUNDCNSALT71=0.

Temporary FOUNDCNSALT72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If FOUNDHYPNOT72=1 or FOUNDANTICONV72=1 then
FOUNDCNSALT72=1;
Else if MSR*a2_sub2 in (57 - 60) or MSR*a2_sub4 in (6140, 6299) or
MSR*a2_sub6 in (613540, 932000,) or MSR*a2_sub8 in (62206040,
96426631) or MSR*a2_sub10 in (9652646380) then
FOUNDCNSALT72=1,
else FOUNDCNSALT72=0.

Temporary FOUNDDIAB71:

Algorithm: Do over MSR*a2_sub2 where * = 5 to 29:
If MSR*a2_sub2=27 then FOUNDDIAB71=1, FOUNDDIAB71=0.

Temporary FOUNDBETA71:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub2=33 AND MSR*a2_sub10^=3310005010 then
FOUNDBETA71=1, else FOUNDBETA71=0.

Temporary FOUNDBETA72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub2 in (33) or MSR*a2_sub6 in (369920,369927, 369988)
then FOUNDBETA72=1,
else FOUNDBETA72=0

Temporary FOUNDANGINH71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6=361000 then FOUNDANGINH71=1; else
FOUNDANGINH71=0.

Temporary FOUNDANGINH72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub6 in (361000, 369918, 369985) or MSR*a2_sub8 in (96645857) then FOUNDANGINH72=1;
else FOUNDANGINH72=0.

Temporary FOUNDANGIANT71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6=361500 then FOUNDANGIANT71=1; else
FOUNDANGIANT71=0.

Temporary FOUNDANGIANT72:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29
If MSR*a2_sub6 in (361500, 369930-369945, 369965) then
FOUNDANGIANT72=1;
else FOUNDANGIANT72=0.

Temporary FOUNDALDANT71:

Algorithm: Do over MSR*a2_sub10 where * = 5 to 29:
If MSR*a2_sub10 IN (3625000000, 3750002000, 3799000220) then
FOUNDALDANT71=1; else FOUNDALDANT71=0.

Temporary FOUNDALDANT72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub6 IN (362500) or MSR*a2_sub10 IN (3750002000,
3799000220) then FOUNDALDANT72=1;
else FOUNDALDANT72=0.

Temporary FOUNDLOOPDIU71:

Algorithm: Do over MSR*a2_sub6 where * = 5 to 29:
If MSR*a2_sub6=372000 then FOUNDLOOPDIU71=1; else
FOUNDLOOPDIU71=0.

Temporary FOUNDLOOPDIU72:

Algorithm: Do over MSR*a2_sub# where * = 5 to 29
If MSR*a2_sub6 in (372000) or MSR*a2_sub8 in (96508007) then
FOUNDLOOPDIU72=1;
else FOUNDLOOPDIU72=0.

Temporary FOUNDDIG71:

Algorithm: Do over MSR*a2_sub10 where * = 5 to 29:
If MSR*a2_sub10=3120001000 then FOUNDDIG71=1; else
FOUNDDIG71=0.

Temporary FOUNDDIG72:

Algorithm: Do over MSR*a2_sub8 where * = 5 to 29:
If MSR*a2_sub8 in (31200010, 96485821) then FOUNDDIG72=1;
else FOUNDDIG72=0.

8.1 CHOLMDCODE71 (DO NOT USE V7 Cholesterol Lowering Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDCHOL71=1 then CHOLMDCODE71=1

Else if FOUNDCHOL71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then CHOLMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then CHOLMDCODE71=.T

Else CHOLMDCODE71=.

Source variable(s): FOUNDCHOL71, ALLMISS, MSR2

8.2 CHOLMDCODE72 (DO NOT USE V7 Medications Which Secondarily Affect Cholesterol in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDCHOL72=1 then CHOLMDCODE72=1

Else if FOUNDCHOL72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then CHOLMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then CHOLMDCODE72=.T

Else CHOLMDCODE72=.

Source variable(s): FOUNDCHOL72, ALLMISS, MSR2

8.3 CHOLMDCODE73 (V7 Cholesterol Lowering Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDCHOL73=1 then CHOLMDCODE73=1

Else if FOUNDCHOL73=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then CHOLMDCODE73=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then CHOLMDCODE73=.T

Else CHOLMDCODE73=.

Source variable(s): FOUNDCHOL73, ALLMISS, MSR2

8.4 CHOLMDCODE74 (V7 Medications Which Secondarily Affect Cholesterol in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDCHOL74=1 then CHOLMDCODE74=1

Else if FOUNDCHOL74=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then CHOLMDCODE74=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then CHOLMDCODE74=.T

Else CHOLMDCODE74=.

Source variable(s): FOUNDCHOL74, ALLMISS, MSR2

8.5 HYPTMD71 (V7 Hypertension Medications in Past 4 Weeks: Self-reported)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If (MSR2 NE 'T') and (MSR33D='Y') then HYPTMD71=1;

Else if (MSR2='T' and MSR33D='') OR MSR33D='N' then HYPTMD71 = 0;

Else If ((MSR2 NE 'T') and (MSR33D='U' or MSR33D = '')) or ((MSR2='T') and (MSR33D = 'Y' or MSR33D='U')) then HYPTMD71=.T;

Source variable(s): MSR2, MSR33D

8.6 HYPTMDCODE71 (DO NOT USE V7 Hypertension Lowering Medication in Past 4 weeks - Using Medi-Span GPI code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDHYPT71=1 OR (MSR2 NE 'T') and (MSR33D='Y')) then HYPTMDCODE71=1

Else if FOUNDHYPT71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0) OR (MSR2= 'T' and MSR33D='') OR (MSR33D= 'N')) then HYPTMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then HYPTMDCODE71=.T

Else HYPTMDCODE71=.

Source variable(s): FOUNDHYPT71, ALLMISS, MSR2, MSR33D

8.7 HYPTMDCODE72 (V7 Hypertension Lowering Medication in Past 4 weeks - Using Medi-Span GPI code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDHYP72=1 OR (MSR2 NE 'T') and (MSR33D='Y')) then
HYPTMDCODE72=1

Else if FOUNDHYP72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR
(ALLMISS=0) OR (MSR2= 'T' and MSR33D='N')) OR (MSR33D= 'N'))
then HYPTMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then
HYPTMDCODE72=.T

Else HYPTMDCODE72=.

Source variable(s): FOUNDHYP72 , ALLMISS, MSR2, MSR33D

8.8 STATINCODE71 (DO NOT USE V7 Statin Use in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDSTAT71=1 then STATINCODE71=1

Else if FOUNDSTAT71=0 AND ((ALLMISS=1 AND MSR2='T') OR
(ALLMISS=0)) then STATINCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then
STATINCODE71=.T

Else STATINCODE71=.

Source variable(s): FOUNDSTAT71, ALLMISS, MSR2

8.9 STATINCODE72 (V7 Statin Use in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,

.T=missing.

Type: Numeric

Algorithm: If FOUNDSTAT72=1 then STATINCODE72=1

Else if FOUNDSTAT72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then STATINCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then STATINCODE72=.T

Else STATINCODE72=.

Source variable(s): FOUNDSTAT72, ALLMISS, MSR2

8.10 ANTICOAGCODE71 (V7 Anticoagulant Use in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDACOAG71=1 then ANTICOAGCODE71=1

Else if FOUNDACOAG71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ANTICOAGCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ANTICOAGCODE71=.T

Else ANTICOAGCODE71=.

Source variable(s): FOUNDACOAG71, ALLMISS, MSR2

8.11 ASPIRINCODE71 (DO NOT USE V7 Aspirin Use in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDASP71=1 then ASPIRINCODE71=1

Else if FOUNDASP71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then ASPIRINCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then ASPIRINCODE71=.T

Else ASPIRINCODE71=.

Source variable(s): FOUNDASP71, ALLMISS, MSR2

8.12 ASPIRINCODE72 (V7 Aspirin Use in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDASP72=1 then ASPIRINCODE72=1

Else if FOUNDASP72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then ASPIRINCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then ASPIRINCODE72=.T

Else ASPIRINCODE72=.

Source variable(s): FOUNDASP72, ALLMISS, MSR2

8.13 ANTIANXMDCODE71 (DO NOT USE V7 Antianxiety Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTIAX71=1 then ANTIANXMDCODE71=1

Else if FOUNDANTIANX71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then ANTIANXMDCODE1=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2=") then ANTIANXMDCODE71=.T

Else ANTIANXMDCODE71=.

Source variable(s): FOUNDANTIANX71, ALLMISS, MSR2

8.14 ANTIANXMDCODE72 (V7 Antianxiety Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTIANX72=1 then ANTIANXMDCODE72=1

Else if FOUNDANTIANX72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then ANTIANXMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2=") then ANTIANXMDCODE72=.T

Else ANTIANXMDCODE72=.

Source variable(s): FOUNDANTIANX72, ALLMISS, MSR2

8.15 ANTIPSYCHMDCODE71 (DO NOT USE V7 Antipsychotic Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTIPSYCH71=1 then ANTIPSYCHMDCODE71=1

Else if FOUNDANTIPSYCH71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ANTIPSYCHMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then
ANTIPSYCHMDCODE71=.T

Else ANTIPSYCHMDCODE71=.

Source variable(s): FOUNDANTIPSYCH71, ALLMISS, MSF2

8.16 ANTIPSYCHMDCODE72 (V7 Antipsychotic Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTIPSYCH72=1 then ANTIPSYCHMDCODE72=1

Else if FOUNDANTIPSYCH72=0 AND ((ALLMISS=1 AND MSR2='T')
OR (ALLMISS=0)) then ANTIPSYCHMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then
ANTIPSYCHMDCODE72=.T

Else ANTIPSYCHMDCODE72=.

Source variable(s): FOUNDANTIPSYCH72, ALLMISS, MSF2

8.17 HYPNOTMDCODE71 (DO NOT USE V7 Hypnotic/Sedative Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDHYPNOT71=1 then HYPNOTMDCODE71=1

Else if FOUNDHYPNOT71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR
(ALLMISS=0)) then HYPNOTMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then
HYPNOTMDCODE71=.T

Else HYPNOTMDCODE71=.

Source variable(s): FOUNDHYPNOT71, ALLMISS, MSR2

8.18 HYPNOTMDCODE72 (V7 Hypnotic/Sedative Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDHYPNOT72=1 then HYPNOTMDCODE72=1

Else if FOUNDHYPNOT72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then HYPNOTMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then HYPNOTMDCODE72=.T

Else HYPNOTMDCODE72=.

Source variable(s): FOUNDHYPNOT72, ALLMISS, MSR2

8.19 ANTICONVMDCODE71 (DO NOT USE V7 Anticonvulsant Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTICONV71=1 then ANTICONVMDCODE71=1

Else if FOUNDANTICONV71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then ANTICONVMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then ANTICONVMDCODE71=.T

Else ANTICONVMDCODE71=.

Source variable(s): FOUNDANTICONV71, ALLMISS, MSR2

8.20 ANTICONVMDCODE72 (V7 Anticonvulsant Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTICONV72=1 then ANTICONVMDCODE72=1

Else if FOUNDANTICONV72=0 AND ((ALLMISS=1 AND MSR2= 'T')
OR (ALLMISS=0)) then ANTICONVMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2=") then
ANTICONVMDCODE72=.T

Else ANTICONVMDCODE72=.

Source variable(s): FOUNDANTICONV72, ALLMISS, MSR2

8.21 ANTIDEMMDCODE71 (DO NOT USE V7 Antidementia/Nootropic Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTIDEM71=1 then ANTIDEMMDCODE71=1

Else if FOUNDANTIDEM71=0 AND ((ALLMISS=1 AND MSR2= 'T')
OR (ALLMISS=0)) then ANTIDEMMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2=") then
ANTIDEMMDCODE71=.T

Else ANTIDEMMDCODE71=.

Source variable(s): FOUNDANTIDEM71, ALLMISS, MSR2

8.22 ANTIDEMMDCODE72 (V7 Antidementia/Nootropic Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANTIDEM72=1 then ANTIDEMMDCODE72=1

Else if FOUNDANTIDEM72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then ANTIDEMMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then ANTIDEMMDCODE72=.T

Else ANTIDEMMDCODE72=.

Source variable(s): FOUNDANTIDEM72, ALLMISS, MSR2

8.23 CNSALTMDCODE71 (DO NOT USE V7 CNS Altering Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDCNSATL71=1 then CNSALTMDCODE71=1

Else if FOUNDCNSATL71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then CNSALTMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then CNSALTMDCODE71=.T

Else CNSALTMDCODE71=.

Source variable(s): FOUNDCNSATL71, ALLMISS, MSR2

8.24 CNSALTMDCODE72 (V7 CNS Altering Medication in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUND CNSATL72=1 then CNSALTMDCODE72=1

Else if FOUND CNSATL72=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then CNSALTMDCODE72=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then CNSALTMDCODE72=.T

Else CNSALTMDCODE72=.

Source variable(s): FOUND CNSATL72, ALLMISS, MSR2

8.25 DIABMDCODE71 (V7 Diabetic Medications in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUND DIAB71=1 then DIABMDCODE71=1

Else if FOUND DIAB71=0 AND ((ALLMISS=1 AND MSR2= 'T') OR (ALLMISS=0)) then DIABMDCODE71=0

Else if ALLMISS=1 AND (MSR2= 'F' OR MSR2='') then DIABMDCODE71=.T

Else DIABMDCODE71=.

Source variable(s): FOUND DIAB71, ALLMISS, MSR2

8.26 BETAMDCODE71 (DO NOT USE V7 Beta-Blocker in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDBETA71=1 then BETAMDCODE71=1

Else if FOUNDBETA71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then BETAMDCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then BETAMDCODE71=.T

Else BETAMDCODE71=.

Source variable(s): FOUNDBETA71, ALLMISS, MSR2

8.27 BETAMDCODE72 (V7 Beta-Blocker in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDBETA72=1 then BETAMDCODE72=1

Else if FOUNDBETA72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then BETAMDCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then BETAMDCODE72=.T

Else BETAMDCODE72=.

Source variable(s): FOUNDBETA72, ALLMISS, MSR2

8.28 ANGINHMDCODE71 (DO NOT USE V7 Angiotensin converting enzyme inhibitor in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANGINH71=1 then ANGINHMDCODE71=1

Else if FOUNDANGINH71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ANGINHMDCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ANGINHMDCODE71=.T

Else ANGINHMDCODE71=.

Source variable(s): FOUNDANGINH71, ALLMISS, MSR2

8.29 ANGINHMDCODE72 (V7 Angiotensin converting enzyme inhibitor in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANGINH72=1 then ANGINHMDCODE72=1

Else if FOUNDANGINH72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ANGINHMDCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ANGINHMDCODE72=.T

Else ANGINHMDCODE72=.

Source variable(s): FOUNDANGINH72, ALLMISS, MSR2

8.30 ANGIANTMDCODE71 (DO NOT USE V7 Angiotensin II receptor antagonists in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANGANT71=1 then ANGANTMDCODE71=1

Else if FOUNDANGANT71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ANGANTMDCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ANGANTMDCODE71=.T

Else ANGANTMDCODE71=.

Source variable(s): FOUNDANGANT71, ALLMISS, MSR2

8.31 ANGIANTMDCODE72 (V7 Angiotensin II receptor antagonists in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDANGANT72=1 then ANGANTMDCODE72=1

Else if FOUNDANGANT72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ANGANTMDCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ANGANTMDCODE72=.T

Else ANGANTMDCODE72=.

Source variable(s): FOUNDANGANT72, ALLMISS, MSR2

8.32 ALDANTMDCODE71 (DO NOT USE V7 Aldosterone Antagonist in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDALDANT71=1 then ALDANTMDCODE71=1

Else if FOUNDALDANT71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ALDANTMDCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ALDANTMDCODE71=.T

Else ALDANTMDCODE71=.

Source variable(s): FOUNDALDANT71, ALLMISS, MSR2

8.33 ALDANTMDCODE72 (V7 Aldosterone Antagonist in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDALDANT72=1 then ALDANTMDCODE72=1

Else if FOUNDALDANT72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then ALDANTMDCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then ALDANTMDCODE72=.T

Else ALDANTMDCODE72=.

Source variable(s): FOUNDALDANT72, ALLMISS, MSR2

8.34 LOOPDIUMDCODE71 (DO NOT USE V7 Loop Diuretic in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDLOOPDIU71=1 then LOOPDIUMDCODE71=1

Else if FOUNDLOOPDIU71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then LOOPDIUMDCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then LOOPDIUMDCODE71=.T

Else LOOPDIUMDCODE71=.

Source variable(s): FOUNDLOOPDIU71, ALLMISS, MSR2

8.35 LOOPDIUMDCODE72 (V7 Loop Diuretic in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDLOOPDIU72=1 then LOOPDIUMDCODE72=1

Else if FOUNDLOOPDIU72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then LOOPDIUMDCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then LOOPDIUMDCODE72=.T

Else LOOPDIUMDCODE72=.

Source variable(s): FOUNDLOOPDIU72, ALLMISS, MSR2

8.36 DIGMDCODE71 (DO NOT USE V7Digoxin in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDDIG71=1 then DIGMDCODE71=1

Else if FOUNDDIG71=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then DIGMDCODE71=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then DIGMDCODE71=.T

Else DIGMDCODE71=.

Source variable(s): FOUNDDIG71, ALLMISS, MSR2

8.37 DIGMDCODE72 (V7Digoxin in past 4 weeks - Using Medi-Span GPI Code)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If FOUNDDIG72=1 then DIGMDCODE72=1

Else if FOUNDDIG72=0 AND ((ALLMISS=1 AND MSR2='T') OR (ALLMISS=0)) then DIGMDCODE72=0

Else if ALLMISS=1 AND (MSR2='F' OR MSR2='') then DIGMDCODE72=.T

Else DIGMDCODE72=.

Source variable(s): FOUNDDIG72, ALLMISS, MSR2

9. PHYSICAL ACTIVITY

9.1 SPRT_I71 (V7 Sport during Leisure Time)

Description: This index is a composite score of sport during leisure time.

Format: Continuous variable between 1 and 5

Type: Numeric

- Create temporary variables I2_1, I2_2, I2_3, I2_4 (sport score corresponding to each of the 4 recorded sports or exercises reported by the participant)

PAC variables being used in temporary variable					
	Sport Count	Activity	Time	Proportion	Remark
I2_1	1	PAC2	PAC3	PAC4	
I2_2	2	PAC6	PAC7	PAC8	0 if PAC5='N'
I2_3	3	PAC10	PAC11	PAC12	0 if PAC9='N'
I2_4	4	PAC14	PAC15	PAC16	0 if PAC13='N'

- An intensity level is assigned to each of the activity codes

Intensity	Activity Codes (PAC2, PAC6, PAC10, PAC14)
Light	1,31,43,55,60,61,73,76,79,97,121,125,136,142,154,169,178,208,229,244,286,304,322,328,403,412,415,418,421,448,499
Moderate	2,3,4,7,10,16,25,28,37,40,49,52,70,82,94,100,118,124,130,139,145,146,148,160,163,175,181,187,190,193,199,205,211,217,232,235,238,247,249,350,333,498,259,262,265,271,289,292,295,301,310,313,319,325,331,340,352,355,358,364,376,385,388,391,397,400,404,406,409,427,430,436,451
Heavy	13,19,22,46,58,67,85,88,91,109,112,115,127,133,151,157,166,172,184,196,202,214,220,223,226,241,250,253,268,274,277,280,283,298,316,334,337,343,346,349,361,367,370,373,379,382,394,424,433,437,439,442

- Calculate sport score for each activity using the following formula, intensity(**X**)*hours_weeks(**Y**)*months_year(**Z**) where X, Y, and Z are assigned values according to the following:

Intensity	X
Light	0.76
Moderate	1.26
Heavy	1.76

Hours (per week)	Variable value	Y
Less than one hour	A	.5
At least 1 but not quite 2	B	1.5
At least 2 but not quite 3	C	2.5
At least 3 but not quite 4	D	3.5
4 or more	E	4.5

Months (per year)	Variable value	Z
Less than 1	A	0.04
At least 1 but not quite 4	B	0.17
At least 4 but not quite 7	C	0.42
At least 7 but not quite 10	D	0.67
10 or more	E	0.92

I2 Summary sports score

- Calculate $I_2 = I_{2_1} + I_{2_2} + I_{2_3} + I_{2_4}$: sum of four simple sports scores.

Note:

If PAC5='N' then $I_{2_2} = 0$

If PAC9='N' then $I_{2_3} = 0$

If PAC13='N' then $I_{2_4} = 0$

This sum score is then recoded to a score of 1 to 5 based on the following criteria:

If PAC1='N' then $I_2 = 1$ else

If $0 \leq I_2 < 0.01$ then $I_2 = 1$

If $0.01 \leq I_2 < 4$ then $I_2 = 2$

If $4 \leq I_2 < 8$ then $I_2 = 3$

If $8 \leq I_2 < 12$ then $I_2 = 4$

If $12 \leq I_2$ then $I_2 = 5$

I3 Leisure sport exercise activity versus peers, recoded

- PAC19 was recoded as follows:

Format	PAC19 value	Recoded value for algorithm
Much less	A	1
Less	B	2
The same	C	3
More	D	4
Much more	E	5

I4 Sweat during leisure time, recoded

- PAC20 was recoded as follows:

Format	PAC20 value	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

I5 Sports/exercise during leisure activity, recoded

- PAC18 was recoded as follows:

Format	PAC18 value	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

$$SPRT_I71 = (I2+I3+I4+I5)/4$$

If I2 or I3 or I4 or I5 is missing, then SPRT_I71=.T

9.2 LISR_I72 (V7 Physical Activity during Leisure Time Excluding Sport)

Description: This index is a composite score of leisure time activity that includes frequency of TV viewing, frequency of walking, and frequency of bicycling. The question about the number of minutes walked or bicycled per day to and from work or shopping was not included in the battery so the variable is not exactly defined as was in previous visits.

Format: Continuous variable between 1 and 5

Type: Numeric

I6 Leisure time television watching, recoded

- PAC21 was recoded as follows:

Format	PAC21 value	Recoded value for algorithm
Never	A	5
Seldom	B	4
Sometimes	C	3
Often	D	2
Very often	E	1

I7 Leisure time walking frequency, recoded

- PAC22 was recoded as follows:

Format	PAC22	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

I8 Leisure time cycling frequency, recoded

- PAC23 was recoded as follows:

Format	PAC23 value	Recoded value for algorithm
Never	A	1
Seldom	B	2
Sometimes	C	3
Often	D	4
Very often	E	5

$LISR_I72 = (I6 + I7 + I8 + ((I7 + I8) / 2)) / 4$

If I6 or I7 or I8 is missing, then LISR_I72=.T

10. PHYSICAL FUNCTION

The physical function variables mainly use the data collected on the ARIC PFX form. The short physical performance battery (SPPB) is a group of measures that combines the results of the gait speed, chair stand and balance tests (Guralnik et al., 2000). The scores range from 0 (worst performance) to 12 (best performance). Frailty variables, originally derived at Visit 5, are also described in this section.

10.1 SPPBCS71 (V7 Physical Function Chair Stand)

Format: integer variable (0-4 possible points)

Type: Numeric

Algorithm: If (PFX1 in (2,3,4)) OR (PFX2 in (2,3)) OR (PFX2b_DER \geq 60) then SPPBCS71=0;
Else if (16.70 \leq PFX2b_DER <60) then SPPBCS71=1;
Else if (13.70 \leq PFX2b_DER <16.70) then SPPBCS71=2;
Else if (11.20 \leq PFX2b_DER <13.70) then SPPBCS71=3;
Else if (. <PFX2b_DER <11.20) then SPPBCS71=4;
Else SPPBCS71=. ;

Source variable(s): PFX1, PFX2, PFX2b_DER

10.2 SPPBST71 (V7 Physical Function Semi Tandem Stand)

Format: integer variable

Type: Numeric

Algorithm: If (PFX3 in (2,3,4)) then SPPBST71=0
Else if (PFX3=5) then SPPBST71=1
Else SPPBST71=.

Source variable(s): PFX3

10.3 SPPBSBS71 (V7 Physical Function Side-by-Side Stand)

Format: integer variable

Type: Numeric

Algorithm: If (PFX4 in (2,3,4)) then SPPBSBS71=0;
Else if (PFX3=5 OR PFX4=5) then SPPBSBS71=1;
Else SPPBSBS71=. ;

Source variable(s): PFX3, PFX4

10.4 SPPBTS71 (V7 Physical Function Tandem Stand)

Format: integer variable

Type: Numeric

Algorithm: If max(PFX5, PFX6) in (2,3,4) then SPPBTS71=0;
else if $3 \leq \max(\text{PFX5a_DER}, \text{PFX6a_DER}) < 10$ then SPPBTS71=1;
else if max(PFX5, PFX6) in (5) then SPPBTS71 = 2;
else SPPBTS71=.

Source variable(s): PFX5, PFX5a_DER, PFX6, PFX6a_DER

10.5 SPPBBAL71 (V7 Physical Function Summary Balance Score)

Format: integer variable

Type: Numeric

Algorithm: SPPBBAL71=sum(of SPPBST71,SPPBSBS71,SPPBTS71);

Source variable(s): SPPBSBS71, SPPBST71, SPPBTS71

10.6 WALK4M71 (V7 Physical Function 4 Meter Walk, Fastest Time of 2 Trials)

Format: continuous variable (f4.2)

Type: Numeric

Algorithm: The better of (1) PFX7a and PFX8a if walking aid is used OR the better of (2) PFX7b and PFX8b if no walking aid is used. There are some instances where a walking aid is used in one trial and not in the other trial. The variable will be the fastest time walked regardless of using the aid or not. All participants at the clinic visits should have a timed walk. Any who did not do the test due to "not attempted/unable" will have a missing value for this variable. If only one trial completed, use the results from that trial.

If $\max(\text{pfx7}, \text{pfx8}) \leq 2$ then WALK4M71=.T;
Else WALK4M71 = min(PFX7a_der, PFX7b_der, PFX8a_der, PFX8b_der);

Source variable(s): PFX7, PFX7a_der, PFX7b_der, PFX8, PFX8a_der, PFX8b_der

10.7 WALKAID71 (V7 Physical Function 4 Meter Walk: Used Walking Aid)

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: This indicator variable will be set to 1 when a patient used a walking aid during the 4 meter walk. The walk is performed twice and in the instance where a patient uses an aid in one trial, but not in the other, this variable will be set according to the presence or absence of a walking aid that goes with the fastest time of the 2 trials.

If WALK4M71>.T and (WALK4M71=PFX7a_der or
WALK4M71=PFX8a_der) then WALKAID71 = 1;
Else if WALK4M71>.T then WALKAID71 = 0;
Else WALKAID71=.T;

Source variable(s): PFX7a_der, PFX8a_der, WALK4M71

10.8 WALK4M72 (V7 Physical Function 4 Meter Walk, Average Time of 2 Trials (BOTH TRIAL WITH AID OR BOTH TRIALS WITHOUT AID))

Format: continuous variable (f4.2)

Type: Numeric

Algorithm: $WALK4M72 = \text{MAX}((PFX7A_DER + PFX8A_DER)/2, (PFX7B_DER + PFX8B_DER)/2)$

Source variable(s): PFX7A_DER, PFX7B_DER, PFX8A_DER, PFX8B_DER

10.9 WALKAID72 (V7 Physical Function 4 Meter Walk: Used Walking Aid in both trials (USE WITH WALK4M62))

Format: 0=No,
1=Yes,
.T=missing.

Type: Numeric

Algorithm: If WALK4M72>.T and (PFX7=3 and PFX8=3) then WALKAID72 = 1;
Else if WALK4M72>.T then WALKAID72=0;
Else WALKAID72=.T;

Source variable(s): PFX7, PFX8, WALK4M72

10.10 SPPB4M71 (V7 Physical Function 4 Meter Walk Score)

Format: integer variable (0-4)

Type: Numeric

Algorithm: If max(PFX7,PFX8) = 2 then SPPB4M71 = 0;
Else if (WALK4M71> 8.70) SPPB4M71 = 1;
Else if (6.21 <= WALK4M71<= 8.70) then SPPB4M71 = 2;
Else if (4.82 <= WALK4M71< 6.21) then SPPB4M71 = 3;
Else if (.z < WALK4M71< 4.82) then SPPB4M71 = 4;
Else SPPB4M71= .T ;

Source variable(s): PFX7, PFX8, WALK4M71

10.11 SPPB71 (V7 Short Physical Performance Summary Battery Score)

Format: integer variable

Type: Numeric

Algorithm: The SPPB total score is only calculated when all three of its subcomponent tasks are not missing. If any of SPPBCS71, SPPBBAL71, or SPPB4M71 are missing, then SPPB71 is set to missing.
If SPPBCS71>NULL and SPPBBAL71>NULL and SPPB4M71>NULL then SPPB71=sum(of SPPBCS71,SPPBBAL71,SPPB4M71);
Else SPPB71 = NULL;

Source variable(s): SPPB4M71, SPPBBAL71, SPPBCS71

10.12 GRIPBEST71 (V7 Physical Function Grip, Best of 2 Trials)

Format: continuous variable

Type: Numeric

Algorithm: Max of PFX11b and PFX11c. Only participants who respond "Both" to PFX10a should be excluded (i.e. surgery on both hands). Less than 2% are missing grip strength as of May 2012, likely to have little impact on inferences. Standard approaches to missing data such as sensitivity analyses with multiple imputations can be employed if inappropriate to ignore missingness.

If PFX10a NE missing and PFX10a NE 'B' then
GRIPBEST71=max(PFX11b, PFX11c);

Source variable(s): PFX10a, PFX11b, PFX11c

10.13 GRIPMEAN71 (V7 Physical Function Grip, Mean of 2 Trials or Result for 1 Trial)

Format: continuous variable

Type: Numeric

Algorithm: Mean of PFX11b and PFX11c. Only participants who respond "Both" to PFX10a should be excluded (i.e. surgery on both hands). The variable will be missing if less than 2 trials are completed. Less than 2% are missing grip strength as of May 2012, likely to have little impact on inferences. Standard approaches to missing data such as sensitivity analyses with multiple imputations can be employed if inappropriate to ignore missingness.

If PFX10a NE missing and PFX10a NE 'B' then
GRIPMEAN71=mean(PFX11b,PFX11c);

Source variable(s): PFX10a, PFX11b, PFX11c

10.14 V6V7WTDELTA71 (% of V6 weight change from V6 to V7 (neg val means loss) – used in frailty weight loss component)

Description: The change in weight from visit 6 to visit 7 is calculated and presented as the % of visit 6 weight, rounded to 0.1.

Format: continuous variable (0-99, %)

Type: Numeric

Algorithm: $((ant4-v6ant4)/v6ant4)*100$, where v6ant4 = ant4 from visit 6 and ant4=ant4 from visit 7

Source variable(s): ANT4, V6ANT4

10.15 WALKSPEED15FT71 (V7 Time in seconds used to walk 15ft – used in frailty slowness component)

Description: The physical function form collects data on times to walk 4 meters. The WALKSPEED15FT71 variable uses the 4m walk rate to calculate the time in seconds needed to walk 15ft.

Format: numeric continuous variable

Type: Numeric

Algorithm: $WALKSPEED15FT71 = \text{MIN}((15/3.28084) * (pfx7a_der/4), (15/3.28084) * (pfx7b_der/4), (15/3.28084) * (pfx8a_der/4), (15/3.28084) * (pfx8b_der/4))$

Source variable(s): PFX7A_DER, PFX7B_DER, PFX8A_DER, PFX8B_DER

10.16 TR1WALK4MSP71 (V7 4M Walking Speed for Trial 1 (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $TR1WALK4MSP71 = 4 / (\text{max}(PFX7a_der, PFX7b_der))$

Source variable(s): PFX7a, PFX7b

10.17 TR2WALK4MSP71 (V7 4M Walking Speed for Trial 2 (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $TR2WALK4MSP71 = 4 / (\text{max}(PFX8a_der, PFX8b_der))$

Source variable(s): PFX8a, PFX8b

10.18 AVGWALK4MSP71 (V7 Average 4M Walking Speed (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $AVGWALK4MSP71 = \text{mean}(TR1WALK4MSP71, TR2WALK4MSP71)$

Source variable(s): TR1WALK4MSP71, TR2WALK4MSP71

10.19 MINWALK4MSP71 (V7 Fastest 4M Walking Speed for Both Trials (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: MINWALK4MSP71=min(TR1WALK4MSP71, TR2WALK4MSP71) ;

Source variable(s): TR1WALK4MSP71, TR2WALK4MSP71

10.20 UNABLETOWALK71 (V7 Indicator Variable Noting PPT No Attempt to Walk 4M, Not Able)

Format: 0=No,
1=Yes,
. =Missing.

Type: Numeric

Algorithm: If PFX7 and PFX8 are both NULL then UNABLETOWALK71=NULL
Else if PFX7=2 and PFX8 = missing or 2 then UNABLETOWALK71=1
Else UNABLETOWALK71=0

Source variable(s): PFX7, PFX8

10.21 UNINTEND_WTLOSS71 (V7 Unintentional Weight Loss)

Format: 0=No,
1=Yes,
. =missing.

Type: Numeric

Algorithm: If tmw1 is not missing then do;
If _tmw3=0 then UNINTEND_WTLOSS71=1;
Else UNINTEND_WTLOSS71=0;

Source variable(s): TMW1, TMW3

10.22 TMW_TOTFT71 (V7 Total Feet Walked in 2-Minute Walk)

Format: continuous variable

Type: Numeric

Algorithm: Calculate if TMW_PRES =1
TMW_TOTFT71=sum((tmw8*50),tmw9);

Source variable(s): TMW_PRES, TMW8, TMW9

10.23 TMW_COMPSPEEDFTPERS71 (V7 TMW Speed for Completers (ft/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if TMW_PRES =1 and tmw11=5
TMW_COMPSPEEDFTPERS71=tmw_totft71/120;

Source variable(s): TMW11, TMW_TOTFT71

10.24 TMW_COMPSPEEDMPERS71 (V7 TMW Speed for Completers (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if TMW_PRES =1 and tmw11=5
TMW_COMPSPEEDMPERS71=tmw_totft71*0.3048/120

Source variable(s): TMW11, TMW_TOTFT71

10.25 TMW_NONCOMPSECWALK71 (V7 TMW Seconds Walking for Noncompleters)

Format: continuous variable

Type: Numeric

Algorithm: Calculate if TMW_PRES =1 and tmw11=4
TMW_NONCOMPSECWALK71=sum((tmw12a*60),tmw12b)

Source variable(s): TMW11, TMW12a, TMW12b

10.26 TMW_NONCOMPSPEEDFTPERS71 (V7 TMW Speed for Noncompleters (ft/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=4 and
tmw_noncompsecwalk71>0
 $TMW_NONCOMPSPEEDFTPERS71 = tmw_totft71 / tmw_noncomps$
ecwalk71

Source variable(s): tmw11, tmw_noncompsecwalk71, tmw_totft71

10.27 TMW_NONCOMPSPEEDMPERS71 (V7 TMW Speed for Noncompleters (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=4 and
tmw_noncompsecwalk71>0
 $TMW_NONCOMPSPEEDMPERS71 = tmw_totft71 * 0.3048 / tmw_non$
compsecwalk71

Source variable(s): tmw11, tmw_noncompsecwalk71, tmw_totft71

10.28 EXHAUST71 (V7 Responded 2 or 3 on CES3 or CES11 (CESD) – frailty exhaustion component)

Description: Second component in considering frailty of PPT based on exhaustion from depression.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: EXHAUST71=1, if (CES3=2 OR CES3=3) OR (CES11=2 OR
CES11=3)
Else EXHAUST71= NULL, if CES3= NULL AND CES11= NULL
ELSE EXHAUST71=0

Source variable(s): CES2, CES3, CES11

10.29 LOWENERGYCOMP71 (V7 Lowest quintile of SPRT_i71 - frailty low physical activity component)

Description: The third component in considering frailty of PPT based on low physical activity during leisure time.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: LOWENERGYCOMP71=1, if (.<SPRT_I71<1.70 AND GENDER='F')
OR (SPRT_I71<2.00 AND GENDER='M')

LOWENERGYCOMP71=0, if (.<SPRT_I71>=1.70 AND GENDER='F')
OR (SPRT_I71>=2.00 AND GENDER='M')

LOWENERGYCOMP71=NULL, if gender=NULL or SPRT_I71=NULL

Source variable(s): SPRT_I71, GENDER

10.30 WTLOSSCOMPA71 (V7 Lost >5% weight or Low BMI (<18.5) – frailty weight loss component for 71a definition)

Description: First component in considering frailty of PPT based on weight loss greater than 5% or low BMI.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: WTLOSSCOMP71=1, if (.<V6V7WTDELTA71<=-5) OR
(.<BMI71<18.5)

WTLOSSCOMP71=0, if (V6V7WTDELTA71>-5) AND
(BMI71>=18.5)

WTLOSSCOMP71=NULL, if V6V7WTDELTA71 and BMI71 are
NULL

Source variable(s): V6V7WTDELTA71, BMI71

10.31 WTLOSSCOMP71 (V7 Lost >10% weight or Low BMI (<18.5) – frailty weight loss component for 71b definition)

Description: First component in considering frailty of PPT based on more restrictive weight loss greater than 10% or low BMI.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: WTLOSSCOMP71=1, if (.<V6V7WTDELTA71<=-10) OR (.<BMI71<18.5)

WTLOSSCOMP71=0, if (V6V7WTDELTA71>-10) AND (BMI71>=18.5)

WTLOSSCOMP71=NULL, if V6V7WTDELTA71 and BMI71 are NULL

Source variable(s): V6V7WTDELTA71 and, BMI71

10.32 WALKSPEEDCOMP71 (V7 Slowest 20% time to walk 15ft – frailty slowness component)

Description: Fourth component in considering frailty of PPT based on slowness by walking.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: WALKSPEEDCOMP71=1:

Males:
IF (gender = 'M' AND V6IN129 <=173 AND Walkspeed15ft71 >= 7) OR
IF (gender = 'M' AND V6IN129 > 173 AND Walkspeed15ft71 >= 6) OR

Females:
IF (gender = 'F' AND V6IN129 <=159 AND Walkspeed15ft71 >= 7) OR

IF (gender = 'F' AND V6IN129 > 159 AND Walkspeed15ft71 >= 6)

WALKSPEEDCOMP71=NULL:

IF gender=NULL or V6IN129=NULL or Walkspeed15ft71= NULL
ELSE WALKSPEEDCOMP71=0

Source variable(s): gender, V6IN129 (participant height last measured at V5),
Walkspeed15ft71

10.33 GRIPSTRENGTHCOMP71 (V7 Slowest 20% grip strength – frailty weakness component)

Description: Fifth component in considering frailty of PPT based on grip strength and BMI.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: GRIPSTRENGTHCOMP71=1:

Males:

IF gender = 'M' AND BMI71 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR

IF gender = 'M' AND 24 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR

IF gender = 'M' AND 26 < BMI71 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR

IF gender = 'M' AND BMI71 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR

Females:

IF gender = 'F' AND BMI71 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR

IF gender = 'F' AND 23 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR

IF gender = 'F' AND 26 < BMI71 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR

IF gender = 'F' AND BMI71 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

GRIPSTRENGTHCOMP71=NULL:

IF gender=NULL or BMI71 =NULL or (pfx11b and pfx11c)=NULL

GRIPSTRENGTHCOMP71=0:

Otherwise

Source variable(s): gender, BMI71, pfx11b, pfx11c

10.34 FRAILTY71a (V7 ARIC Physical Function WG Frailty Definition (a))

Description: There are 5 components that are considered in deriving the frailty variable. Indicators for these components are defined below. If 3 or more of the components are present, then FRAILTY71a=1. If 1 or 2 of the components are present, then FRAILTY71a=2. Of none of the components are present and there is data for each component, then FRAILTY71a=3.

Format:
1=Frail
2=Prefrail
3=Robust
.=Missing

Type: Numeric

Algorithm:

1. Weight loss:
If (.<V6V7WTDELTA71<=-5) OR (.<BMI71<18.5)
2. Exhaustion:
If EXHAUST71=1
3. Low Energy:
If (.<SPRT_I71<1.70 AND GENDER='F') OR (.<SPRT_I71<2.00 AND GENDER='M')
4. Walking Speed:
IF (gender = 'M' AND V6IN129 <=173 AND Walkspeed15ft71>= 7) OR
IF (gender = 'M' AND V6IN129 > 173 AND Walkspeed15ft71>= 6) OR
IF (gender = 'F' AND V6IN129 <=159 AND Walkspeed15ft71>= 7) OR
IF (gender = 'F' AND V6IN129 > 159 AND Walkspeed15ft71>= 6)
5. Grip Strength
IF gender = 'M' AND BMI71 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI71 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI71 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR

IF gender = 'F' AND BMI71 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
 OR
 IF gender = 'F' AND 23 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
 <= 17.3 OR
 IF gender = 'F' AND 26 < BMI71 <= 29 AND .<MAX(pfx11b, pfx11c)
 <= 18 OR
 IF gender = 'F' AND BMI71 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): V6V7WTDELTA71, BMI71, EXHAUST71, SPRT_I71, GENDER,
 V6IN129 (participant height last measured at V5), Walkspeed15ft71,
 PFX11B, PFX11C

10.35 FRAILTY71b (V7 ARIC Physical Function WG Frailty Definition (b))

Description: There are 5 components that are considered in deriving the frailty variable. Indicators for these components are defined below. If 3 or more of the components are present, then FRAILTY71b=1. If 1 or 2 of the components are present, then FRAILTY71b=2. Of none of the components are present and there is data for each component, then FRAILTY71b=3.

Format: 1=Frail
 2=Prefrail
 3=Robust
 .=Missing

Type: Numeric

Algorithm:

1. Weight loss:
 If (.<V6V7WTDELTA71<=-10) OR (.<BMI71<18.5)
2. Exhaustion:
 If EXHAUST71=1
3. Low Energy:
 If (.<SPRT_I71<1.70 AND GENDER='F') OR (.<SPRT_I71<2.00 AND GENDER='M')
4. Walking Speed:
 IF (gender = 'M' AND V6IN129 <=173 AND Walkspeed15ft71>= 7) OR
 IF (gender = 'M' AND V6IN129 > 173 AND Walkspeed15ft71>= 6) OR
 IF (gender = 'F' AND V6IN129 <=159 AND Walkspeed15ft71>= 7) OR
 IF (gender = 'F' AND V6IN129 > 159 AND Walkspeed15ft71>= 6)
5. Grip Strength

IF gender = 'M' AND BMI71 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI71 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI71 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI71 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI71 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI71 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): V6V7WTDELTA71, BMI71, EXHAUST71, SPRT_I71, GENDER,
V6IN129 (participant height last measured at V5), Walkspeed15ft71,
PFX11B, PFX11C

10.36 FRAILTY73 (V7 ARIC Physical Function WG Frailty Definition – weight loss dropped)

Description: There are 4 components considered in deriving the frailty variable. Indicators for these components are defined below. If 3 or more of the components are present, then frailty73=1. If 1 or 2 of the components are present, then frailty73=2. If none of the components are present (=0) AND there is data for each component (meaning no component has a missing value), then frailty73=3.

Format: 1=Frail
2=Prefrail
3=Robust
.=Missing

Type: Numeric

Algorithm:

1. Exhaustion:
If EXHAUST71=1
2. Low Energy:
If (.<SPRT_I71<1.70 AND GENDER='F') OR (.<SPRT_I71<2.00 AND GENDER='M')
3. Walking Speed:

IF (gender = 'M' AND V6IN129 <=173 AND Walkspeed15ft71>= 7) OR
IF (gender = 'M' AND V6IN129 > 173 AND Walkspeed15ft71>= 6) OR
IF (gender = 'F' AND V6IN129 <=159 AND Walkspeed15ft71>= 7) OR
IF (gender = 'F' AND V6IN129 > 159 AND Walkspeed15ft71>= 6)

4. Grip Strength

IF gender = 'M' AND BMI71 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI71 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI71 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI71 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI71 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI71 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): BMI71, EXHAUST71, SPRT_I71, GENDER, V6IN129 (participant height last measured at V5), Walkspeed15ft71, PFX11B, PFX11C

10.37 FRAILTY74 (V7 ARIC Physical Function WG Frailty Definition (unintentional weight loss))

Description: There are 5 components considered in deriving the frailty variable. Indicators for these components are defined below. If 3 or more of the components are present, then frailty74=1. If 1 or 2 of the components are present, then frailty74=2. If none of the components are present AND there is data for each component, then frailty74=3.

Format: 1=Frail
2=Prefrail
3=Robust
.=Missing

Type: Numeric

Algorithm:

1. Unintentional weight loss
If UNINTEND_WTLOSS71=1
2. Exhaustion:

If EXHAUST71=1

3. Low Energy:
If (.<SPRT_I71<1.70 AND GENDER='F') OR (.<SPRT_I71<2.00 AND GENDER='M')
4. Walking Speed:
IF (gender = 'M' AND V6IN129 <=173 AND Walkspeed15ft71>= 7) OR
IF (gender = 'M' AND V6IN129 > 173 AND Walkspeed15ft71>= 6) OR
IF (gender = 'F' AND V6IN129 <=159 AND Walkspeed15ft71>= 7) OR
IF (gender = 'F' AND V6IN129 > 159 AND Walkspeed15ft71>= 6)
5. Grip Strength
IF gender = 'M' AND BMI71 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI71 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI71 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI71 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI71 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI71 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI71 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): UNINTEND_WTLOSS71, BMI71, EXHAUST71, SPRT_I71, GENDER, V6IN129 (participant height last measured at V5), Walkspeed15ft71, PFX11B, PFX11C

10.38 GAITSPEED71 (V7 Gait Speed (m/sec))

Type: Numeric

Algorithm: If WALK4M71>0 then GAITSPEED71=4/WALK4M71

Source variable(s): WALK4M71

11. HEARING RESULTS

11.1 PTARIGHT71 (V7 Four Frequency Pure-tone Average (PTA) of the Right Ear (Db HL))

Format: numeric continuous variable

Type: Numeric

Algorithm: If AUD4a1 and AUD4a7 are both not missing and the absolute value of (AUD4a1 - AUD4a7) > 10 then PTARIGHT71=NULL
Else if AUD0c="H" and AUD3="N" then PTARIGHT71=NULL
Else if AUD4a3 and AUD4a1 and AUD4a9 and AUD4a13 are all not missing then
PTARIGHT71=mean(AUD4a3,AUD4a1,AUD4a9,AUD4a13)

Source variable(s): AUD0c, AUD3, AUD4a1, AUD4a3, AUD4a7, AUD4a9, AUD4a13

11.2 PTALEFT71 (V7 Four Frequency Pure-tone Average (PTA) of the Left Ear (Db HL))

Format: continuous variable

Type: Numeric

Algorithm: If AUD4b1 and AUD4b7 are both not missing and the absolute value of (AUD4b1 - AUD4b7) > 10 then PTALEFT71=NULL
Else if AUD0c="H" and AUD3="N" then PTALEFT71=NULL
Else if AUD4b3 and AUD4b1 and AUD4b9 and AUD4b13 are all not missing then
PTALEFT71=mean(AUD4b3,AUD4b1,AUD4b9,AUD4b13)

Source variable(s): AUD0c, AUD3, AUD4b1, AUD4b3, AUD4b7, AUD4b9, AUD4b13

11.3 PTABETTER71 (V7 Four Frequency Pure-tone Average (PTA) of the Better Ear (smaller PTA) (Db HL))

Format: continuous integer

Type: Numeric

Algorithm: If PTARIGHT71 not missing or PTALEFT71 not missing then
PTABETTER71=min(PTARIGHT71, PTALEFT71)

Source variable(s): PTARIGHT71, PTALEFT71

11.4 PTABETTERCAT71 (V7 Hearing Loss Category Based on the Four Frequency Pure-tone Average (PTA) of the Better Ear)

Description: Values of this categorical variable indicate the hearing loss category for hearing in the better ear. This variable is used in the PPT's summary of results.

Format: 1=No hearing loss,
2=Mild hearing loss,
3=Moderate hearing loss,
4=Severe hearing loss

Type: Numeric

Algorithm: If NULL < PTABETTER71 <= 25 then PTABETTERCAT71=1
Else if 25 < PTABETTER71 <= 40 then PTABETTERCAT71=2
Else if 40 < PTABETTER71 <= 70 then PTABETTERCAT71=3
Else if PTABETTER71 > 70 then PTABETTERCAT71=4

Source variable(s): PTABETTER71

12. NEUROCOGNITIVE STUDY

12.1 CESD71 (V7 CES-Depression Scale)

Format: Continuous Numeric Variable

Type: numeric

Algorithm: If there are 10 non-missing items among CES1 through CES11 then
CESD71=sum of CES1 through CES11
Otherwise, missing.

Source variable(s): CES1 – CES11

12.2 FAQ71 (Functional Activities Questionnaire)

Description: Numeric variable for score on the Functional Activities Questionnaire.

Type: Numeric

Algorithm: $FAQ71 = CDI25 + CDI26 + CDI31 + 2(CDI35) + CDI36 + CDI37 +$
 $CDI18 + CDI17 + CDI22$

Source variable(s): CDI17, CDI18, CDI22, CDI25, CDI26, CDI31, CDI35, CDI36, CDI37

APPENDIX 1. ARIC DERIVED MEDICATION VARIABLES

Background: ARIC uses Generic Product Identifier (GPI) codes (see Table 1) to identify use of selected medications based on data collected in the Medication Survey (MSR) form at the ARIC clinic visits. As a result of recent conversations regarding ARIC medication coding, the ARIC Steering Committee was interested in ensuring that the current derived medication variables were including and excluding all the proper medication codes that define those variables.

Methods: As a starting point, the CC focused their efforts on Visit 6 data, but then extrapolated the proposed definition changes to Visit 5 and Visit 7. The CC prepared a simplified version of the Medi-Span dictionary for investigators to review the medications currently included in the derived variable definitions and identify medications that should be added or removed from the definition. Once reviewed, the CC applied both the current and proposed definitions to ARIC Visit 5, Visit 6, and Visit 7 MSR data and created agreement tables to assess the ramifications of the definition changes. On November 18, 2020, the ARIC Steering Committee approved the proposed definition changes pending the implementation of the modifications discussed during that call.

Results: After making all the ARIC Steering Committee requested changes, the CC recreated the tables starting with Table 3 that summarize the distribution of the ARIC derived medication variables for Visits 5 - 7 as previously defined (old definition) compared to the new, SC approved definitions. The shaded cells identify differences between the old definitions and the new, SC approved definitions. The specific definitions are described in the DERIVE dataset dictionary available on the ARIC secure website.

Decisions: For all future visits, the CC will only distribute the medication derived variables that use the new, SC approved definitions. For Visits 5 - 7, the old variable versions will be retained in the updated derived datasets for reproducibility purposes, but those variables will be updated with "DO NOT USE" in the label and data dictionary as these should NOT be used moving forward. Analyses moving forward should only use the new medication derived variables.

Future Reassessment: The ARIC Steering Committee approved the proposal to conduct another review of the medication definition at the end of Visit 11; therefore, we do not anticipate changes to these derived medication variable definitions for Visit 9 through 11 until after Visit 11 is completed.

Distinguishing Old and New Variable Definitions: The new medication variables were named using the same variable naming pattern as was previously used (i.e., [med type][visit number][variable version]), but with the variable version at the end of the variable name increasing as was appropriate. Most variable names were updated from 1->2, but the cholesterol definitions were updated from 1->3 and 2->4 because we already had two definitions for cholesterol medications. Refer to Table 2 for the full list of derived medication variables.

Table 1. Generic Product Identifier (GPI) codes are defined as follows: The first six characters of the GPI define the therapeutic class code, the next two pairs the drug name, and the last four define route, dosage or strength.

GPI Code	Coding	Example
58	Drug group	Antidepressants
58-20	Drug class	Tricyclic agents
58-20-00	Drug sub-class	—
58-20-00-60	Drug name	Nortriptyline
58-20-00-60-10	Drug name extension	Hydrochloride
58-20-00-60-10-01	Dosage form	Capsule
58-20-00-60-10-01-05	Strength	10 mg

Table 2. Summary of the ARIC derived medication variable versions indicated as DO NOT USE for ARIC Visits 5 and later. The new medication variables were named using the same variable naming pattern as was previously used (i.e., [med type][visit number][variable version]), but with the variable version at the end of the variable name increasing as appropriate.

Medication Type	Medication Type in Variable Name [med type]	Variable Versions as DO NOT USE ¹ for Visit 5+ [variable version]	Variable Versions for Current Use for Visit 5+ [variable version]
Cholesterol Lowering ²	CHOLMDCODE	1	3
Secondarily Affect Cholesterol ²	CHOLMDCODE	2	4
Hypertension (Self-Reported) ²	HYPTMD	n/a	1
Hypertension Lowering ²	HYPTMDCODE	1	2
Statin ²	STATINCODE	1	2
Anticoagulant ²	ANTICOAGCODE	n/a	1
Aspirin ²	ASPIRINCODE	1	2
Anti-anxiety	ANTIAXMDCODE	1	2
Anti-psychotic	ANTIPSYCHMDCODE	1	2
Hypnotic / Sedative	HYPNOTMDCODE	1	2
Anti-convulsant	ANTICONVMDCODE	1	2
Anti-dementia / Nootropic	ANTIDEMMDCODE	1	2
CNS Altering	CNSALTMDCODE	1	2
Diabetic	DIABMDCODE	n/a	1
Beta-Blocker	BETAMDCODE	1	2
Angiotensin Converting Enzyme (ACE) Inhibitor	ANGINHMDCODE	1	2
Angiotensin II Receptor Antagonists	ANGIANTMDCODE	1	2
Aldosterone Antagonist	ALDANTMDCODE	1	2
Loop Diuretic	LOOPDIUMDCODE	1	2

¹ The new variable definitions and "DO NOT USE" instructions do not apply to Visits 1 - 4. Only the first six digits of the medication codes were recorded for those visits, so the updated derived variable definitions were not applicable.

² The original version of this medication variable is included in the derived variable datasets for Visits 1 - 4 and may continue to be used.

Table 3. Summary of the derived variable for cholesterol lowering medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Cholesterol Lowering Medication (CHOLMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	1969 (100.0)	0 (0.0)	1969
	No	3 (0.2)	1612 (99.8)	1615
Visit 6	Yes	2222 (100.0)	0 (0.0)	2222
	No	6 (0.3)	1750 (99.7)	1756
Visit 5	Yes	3637 (100.0)	0 (0.0)	3637
	No	17 (0.6)	2884 (99.4)	2901
Medications added to the proposed definition	<ul style="list-style-type: none"> • Sitagliptin-Simvastatin Tab 50-10 MG • Inositol Niacinate Cap 500 MG • Amlodipine Besylate-Atorvastatin Calcium Tab 2.5-10 MG • Niacin w/ Inositol Cap 400-100 MG • Atorvastatin Calcium (Bulk) Powder • Cholestyramine (Bulk) Powder • Fenofibrate (Bulk) Powder • Simvastatin (Bulk) Powder 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • <i>None</i> 			

Table 4. Summary of the derived variable for medications which secondarily affect cholesterol as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Medications which Secondarily Affect Cholesterol (CHOLMDCODE_2)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	1526 (71.2)	617 (28.8)	2143
	No	35 (2.4)	1406 (97.6)	1441
Visit 6	Yes	1700 (71.6)	674 (28.4)	2374
	No	33 (2.1)	1571 (97.9)	1604
Visit 5	Yes	2778 (74.6)	947 (25.4)	3725
	No	114 (4.1)	2699 (95.9)	2813
Medications added to the proposed definition	<ul style="list-style-type: none"> • 120000 med codes (includes Elvitegrav combos, Abacavir combos, and Atazanavir Sulfate combos) • 240000 med codes (estrogens, estrodials) • 250000 med codes (Estrodial combos) • 590000 med codes (includes paliperidones, risperidones, haoperidols, loxapines, and perochlorperazines) 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • 340000 med codes (includes Diltiazem HCl and Nicardipine HCl) • Ethacrynic Acid • Ethacrynate Sodium For Inj • Furosemide • Torsemide • Pindolol • Acebutolol HCl • Nebivolol HCl 			

Table 5. Summary of the derived variable for hypertension lowering medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Hypertension Lowering Medication (HYPTMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	2767 (100.0)	0 (0.0)	2767
	No	0 (0.0)	817 (100.0)	817
Visit 6	Yes	3056 (99.0)	31 (1.0)	3087
	No	0 (0.0)	891 (100.0)	891
Visit 5	Yes	4892 (99.1)	43 (0.9)	4935
	No	0 (0.0)	1603 (100.0)	1603
Medications added to the proposed definition	<ul style="list-style-type: none"> • Sacubitril-Valsartan • Amlodipine Besylate-Atorvastatin Calcium • Isosorbide Dinitrate-Hydralazine HCl 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • Glycerin Soln 75% • Buchu-Cornsilk-Couch Grass-Hydrangea 			

Table 6. Summary of the derived variable for statin use as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Statin Use (STATINCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	1878 (100.0)	0 (0.0)	1878
	No	9 (0.5)	1697 (99.5)	1706
Visit 6	Yes	2116 (100.0)	0 (0.0)	2116
	No	12 (0.6)	1850 (99.4)	1862
Visit 5	Yes	3325 (100.0)	0 (0.0)	3325
	No	69 (2.1)	3144 (97.9)	3213
Medications added to the proposed definition	<ul style="list-style-type: none"> • Sitagliptin-Simvastatin • Ezetimibe-Atorvastatin • Ezetimibe-Simvastatin • Amlodipine Besylate-Atorvastatin Calcium • Atorvastatin Calcium (Bulk) Powder • Simvastatin (Bulk) Powder 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • Misc Natural HMG CoA Reductase Inhibitors 			

Table 7. Summary of the derived variable for aspirin use as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Aspirin Use (ASPIRINCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	1792 (81.7)	401 (18.3)	2193
	No	1 (0.1)	1390 (99.9)	1391
Visit 6	Yes	2100 (83.8)	405 (16.2)	2505
	No	0 (0.0)	1473 (100.0)	1473
Visit 5	Yes	3852 (86.2)	619 (13.8)	4471
	No	0 (0.0)	2067 (100.0)	2067
Medications added to the proposed definition	<ul style="list-style-type: none"> • Phenylephrine-Aspirin • Phenyleph-Chlorphen-DM-Aspirin • Phenyleph-Doxylamine-DM-Aspirin • Carisoprodol w/ Aspirin • Orphenadrine w/ Aspirin • Aspirin-Dipyridamole 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • Mostly acetaminophen based meds (codes: 6420, 6499, 6599) 			

Table 8. Summary of the derived variable for antianxiety medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Antianxiety Medication (ANTIANXMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	205 (100.0)	0 (0.0)	205
	No	0 (0.0)	3379 (100.0)	3379
Visit 6	Yes	250 (100.0)	0 (0.0)	250
	No	0 (0.0)	3728 (100.0)	3728
Visit 5	Yes	484 (100.0)	0 (0.0)	484
	No	0 (0.0)	6054 (100.0)	6054
Medications added to the proposed definition	<ul style="list-style-type: none"> • Alprazolam • Diazepam 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • None 			

Table 9. Summary of the derived variable for antipsychotic medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Antipsychotic Medication (ANTIPSYCHMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	11 (100.0)	0 (0.0)	11
	No	28 (0.8)	3545 (99.2)	3573
Visit 6	Yes	17 (100.0)	0 (0.0)	17
	No	31 (0.8)	3930 (99.2)	3961
Visit 5	Yes	31 (100.0)	0 (0.0)	31
	No	41 (0.6)	6466 (99.4)	6507
Medications added to the proposed definition	<ul style="list-style-type: none"> • Clozapine • Quetiapine Fumarate • Loxapine • Asenapine Maleate • Olanzapine • Molindone HCl • Aripiprazole • Brexpiprazole • Pimozide 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • <i>None</i> 			

Table 10. Summary of the derived variable for hypnotic or sedative medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Hypnotic/Sedative Medication (HYPNOTMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	173 (100.0)	0 (0.0)	173
	No	191 (5.6)	3220 (94.4)	3411
Visit 6	Yes	199 (100.0)	0 (0.0)	199
	No	236 (6.2)	3543 (93.8)	3779
Visit 5	Yes	488 (100.0)	0 (0.0)	488
	No	389 (6.4)	5661 (93.6)	6050
Medications added to the proposed definition	<ul style="list-style-type: none"> • Dexmedetomidine HCl • Tasimelteon • Doxepin HCl • Ramelteon • Suvorexant • Temazepam • Zolpidem • Brompheniramine • Chlorpheniramine • Cyproheptadine • Dexchlorpheniramine • Dimenhydrinate • Diphenhydramine • Doxylamine • Pheniramine • Promethazine • 59 med codes (includes anti-psychotics, e.g., Clozapine, Quetiapine Fumarate, Loxapine, Asenapine Maleate, Olanzapine) 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • <i>None</i> 			

Table 11. Summary of the derived variable for anticonvulsant medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Anticonvulsant Medication (ANTICONVMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	39 (100.0)	0 (0.0)	39
	No	374 (10.6)	3171 (89.4)	3545
Visit 6	Yes	50 (100.0)	0 (0.0)	50
	No	394 (10.0)	3534 (90.0)	3928
Visit 5	Yes	108 (100.0)	0 (0.0)	108
	No	484 (7.5)	5946 (92.5)	6430
Medications added to the proposed definition	<ul style="list-style-type: none"> • PB-Hyoscy-Atrop-Scopol • Carbamazepine • Phenobarbital • 72 med codes (includes Phenytoin, valproate, and levetiracetam) • Phenytoin (Bulk) Powder 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • None 			

Table 12. Summary of the derived variable for antimentia or nootropic medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Antidementia/Nootropic Medication (ANTIDEMMDCOD_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	121 (100.0)	0 (0.0)	121
	No	24 (0.7)	3439 (99.3)	3463
Visit 6	Yes	112 (100.0)	0 (0.0)	112
	No	22 (0.6)	3844 (99.4)	3866
Visit 5	Yes	144 (100.0)	0 (0.0)	144
	No	29 (0.5)	6365 (99.5)	6394
Medications added to the proposed definition	<ul style="list-style-type: none"> • Donepezil Hydrochloride • Galantamine Hydrobromide • Rivastigmine • Memantine HCl 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • Pimozide 			

Table 13. Summary of the derived variable for CNS altering medications as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

CNS Altering Medication (CNSALTMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	185 (100.0)	0 (0.0)	185
	No	1086 (32.0)	2313 (68.0)	3399
Visit 6	Yes	244 (100.0)	0 (0.0)	244
	No	1155 (30.9)	2579 (69.1)	3734
Visit 5	Yes	497 (100.0)	0 (0.0)	497
	No	1767 (29.3)	4274 (70.7)	6041
Medications added to the proposed definition	<ul style="list-style-type: none"> • All Hypnotic/Sedative and Anticonvulsant Medications • 58 med codes (includes sertraline, bupropion, duloxetine, etc.) • Buspirone HCl • Droperidol • Hydroxyzine • Meprobamate • Alprazolam • Diazepam • Clozapine • Quetiapine Fumarate • Loxapine • Asenapine Maleate • Olanzapine • Molindone • Aripiprazole • Brexpiprazole • Eszopiclone • Zaleplon • Atomoxetine • Armodafinil • Dexmethylphenidate • Methylphenidate • Modafinil • Fluoxetine HCl • Olanzapine-Fluoxetine HCl • Chlordiazepoxide-Amitriptyline • Perphenazine-Amitriptyline • Amitriptyline • Fluoxetine HCl (Bulk) Powder 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • None 			

Table 14. Summary of the derived variable for beta-blockers as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Beta-Blocker (BETAMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	1300 (100.0)	0 (0.0)	1300
	No	20 (0.9)	2264 (99.1)	2284
Visit 6	Yes	1450 (100.0)	0 (0.0)	1450
	No	30 (1.2)	2498 (98.8)	2528
Visit 5	Yes	2197 (100.0)	0 (0.0)	2197
	No	69 (1.6)	4272 (98.4)	4341
Medications added to the proposed definition	<ul style="list-style-type: none"> • Timolol Maleate • 3699 med codes (includes Metoprolol & Hydrochlorothiazide) 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • None 			

Table 15. Summary of the derived variable for angiotensin converting enzyme (ACE) inhibitor as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Angiotensin converting enzyme (ACE) inhibitor (ANGINHMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	717 (100.0)	0 (0.0)	717
	No	156 (5.4)	2711 (94.6)	2867
Visit 6	Yes	864 (100.0)	0 (0.0)	864
	No	206 (6.6)	2908 (93.4)	3114
Visit 5	Yes	1514 (100.0)	0 (0.0)	1514
	No	398 (7.9)	4626 (92.1)	5024
Medications added to the proposed definition	<ul style="list-style-type: none"> • 3699 med codes (includes several hydrochlorothiazide combos) • Lisinopril 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • None 			

Table 16. Summary of the derived variable for angiotensin II receptor antagonists as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Angiotensin II receptor antagonists (ANGIANTMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	586 (100.0)	0 (0.0)	586
	No	202 (6.7)	2796 (93.3)	2998
Visit 6	Yes	578 (100.0)	0 (0.0)	578
	No	255 (7.5)	3145 (92.5)	3400
Visit 5	Yes	715 (100.0)	0 (0.0)	715
	No	420 (7.2)	5403 (92.8)	5823
Medications added to the proposed definition	<ul style="list-style-type: none"> • 3699 med codes (includes amlodipine combos and valsartan combos) 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • <i>None</i> 			

Table 17. Summary of the derived variable for aldosterone antagonists as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Aldosterone Antagonist (ALDANTMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	93 (100.0)	0 (0.0)	93
	No	2 (0.1)	3489 (99.9)	3491
Visit 6	Yes	103 (100.0)	0 (0.0)	103
	No	3 (0.1)	3872 (99.9)	3875
Visit 5	Yes	152 (100.0)	0 (0.0)	152
	No	4 (0.1)	6382 (99.9)	6386
Medications added to the proposed definition	• Eplerenone			
Medications removed from the proposed definition	• None			

Table 18. Summary of the derived variable for loop diuretics as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Loop diuretic (LOOPDIUMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	405 (100.0)	0 (0.0)	405
	No	0 (0.0)	3179 (100.0)	3179
Visit 6	Yes	449 (100.0)	0 (0.0)	449
	No	0 (0.0)	3529 (100.0)	3529
Visit 5	Yes	688 (100.0)	0 (0.0)	688
	No	0 (0.0)	5850 (100.0)	5850
Medications added to the proposed definition	• Ethacrynic acid bulk powder			
Medications removed from the proposed definition	• None			

Table 19. Summary of the derived variable for digoxin as currently defined compared to the proposed definition, by Visit 7, Visit 6, and Visit 5

Digoxin (DIGMDCODE_1)	Old Definition	New, SC Approved Definition		
		Yes n (row %)	No n (row %)	Total
Visit 7	Yes	37 (100.0)	0 (0.0)	37
	No	0 (0.0)	3547 (100.0)	3547
Visit 6	Yes	50 (100.0)	0 (0.0)	50
	No	0 (0.0)	3928 (100.0)	3928
Visit 5	Yes	108 (100.0)	0 (0.0)	108
	No	0 (0.0)	6430 (100.0)	6430
Medications added to the proposed definition	<ul style="list-style-type: none"> • Digitoxin (Bulk) Powder • Digoxin (Bulk) Powder 			
Medications removed from the proposed definition	<ul style="list-style-type: none"> • <i>None</i> 			