



Atherosclerosis Risk in Communities Study

Cohort Exam Visit 6 NCS

DERIVE61 Derived Variable Dictionary (v1.2)

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Prepared by the Collaborative Studies Coordinating Center

ARIC Visit 6 Derived Variable Dictionary

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NEW OR CHANGED FROM PREVIOUS DISTRIBUTION

This table describes the changes to the last published DERIVE61_yymmdd dictionary. The DERIVE61_yymmdd dataset will not be final until the 2017 ARIC surveillance data is final. 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
09/27/2019	Added ALL SF12 variables: SF12PF61, SF12RP61, SF12BP61, SF12GH61, SF12VT61, SF12SF61, SF12RE61, SF12MH61, SF12PFZ61, SF12RPZ61, SF12BPZ61, SF12GHZ61, SF12VTZ61, SF12SFZ61, SF12REZ61, SF12MHZ61, SF12PFT61, SF12RPT61, SF12BPT61, SF12GHT61, SF12VTT61, SF12SFT61, SF12RET61, SF12MHT61, SF12AGGPHYS61, SF12AGGMENT61, SF12AGGPHYST61, SF12AGGMENTT61	The company that holds the license has instructed us to include the statement "<u>a modified version of the SF-12v2 was used</u>" in ALL manuscripts using SF-12 data. Note that the modifications are very minor, things like underlining certain words or phrases in the questions, and largely irrelevant because the instrument was interviewer-administered.
09/27/2019	FORSMK62, EVRSMK62, CIGT62, EGFR61, PRVCHD61, PRVCHD63, PRVCHD64, PREVDEFHF61, PREVDEFPOSSH61, PRVSTR61, DEMRVTYPE61, EXHAUST61, FRAILITY61a, FRAILITY61b, FRAILITY63, FRAILITY64, and GAITSPEED61	Added variables that were missing from the previously distributed datasets.
09/27/2019		Derived variables using event year 2017 surveillance data are final and frozen.
9/12/2018	REVIEWERSYND61, COGDIAG61	Updated to reflect the final classification for the 8 adjudicated reviews that were pending at the time of the previous data distribution.
07/18/2018	LASTFUINTERVIEW_DATE61, DIABTS63, DIABTS64, DIABTS66, DIABTS67, MDDXMI62, HXOFMI62, PRVSTR62	Updated the variables that use follow-up data with the most recently distributed composite follow-up dataset (uc750301_compositeafu_safu). See codebook on ARIC website for updated distributions of these variables.
03/16/2018	NEUROCOGSTAT61, ALGDX61, ALGDXSTRATUM61	An error in the specifications for calculating the predicted domain scores for V6 affected the variables NEUROCOGSTAT61, ALGDX61, ALGDXSTRATUM61. This dataset includes corrected values for these variables.

1. OVERVIEW

The DERIVE61_yymmdd dataset has 4,003 records, one for each participant who completed Stage 1 at Visit 6. 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 conventions are as follows: The dataset name retains the retrieval date (ex: DERIVE61_180718) until the dataset is considered final, frozen. After a dataset is frozen, the retrieval date is dropped from the dataset name (ex: DERIVE61). 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: GENDER51 at Visit 5 vs. GENDER61 at Visit 6). The last digit in the variable name identifies the definition version of a 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. DERIVE61_yymmdd will be final, frozen after the surveillance datasets are complete for events in 2017.

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 6/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 V6CENTER (Visit 6 Field Center)

Algorithm: The value of V6CENTER is the same as CENTER unless the ARIC study participant has relocated geographically and moved into another field center at visit 6. In that instance, the value of V6CENTER is the value of the field center where the participant was seen.

2.5 V6DATE61 (V6 Stage 1 exam date)

Description: SAS date variable that documents the date of the participant's visit 6 exam. It 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: Date

Algorithm: V6DATE61 = MIN(ANT0a, SBP0a)
If V6DATE61=missing then V6DATE61=BIO0a

Source variable(s): ANT0a, BIO0a, SBP0a

2.6 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 6 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 res_OTH='No Consent';

Source variable(s): ICT3, ICT4, ICT7

2.7 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 6 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

2.8 LASTFUINTERVIEW_DATE61 (Date of last completed follow-up interview)

Description: SAS date variable that documents the date of the participant's last completed follow-up interview where an actual contact was made, prior to January 1, 2018.

Type: Date

Algorithm: LASTFUINTERVIEW_DATE61=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 January 1, 2018.

Source variable(s): AFUcomp1_A, AFUcomp2_A

2.9 STAGE_1_TYPE (V6 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 GENDER61 (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: GENDER61 = 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 RACEGRP61 (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: RACEGRP61 = V1CORRA1

Source variable(s): V1CORRA1

3.5 BIRTHDAT (Date of Birth)

Description: SAS date variable that documents the originally reported date of birth for the participant.

Type: Date

Algorithm: BIRTHDAT = BIRTHDAT from DERIVE13

Source variable(s): [DERIVE13] BIRTHDAT

3.6 BIRTHDAT61 (Corrected Birthdate (V1CORBIR))

Description: SAS date variable that corrects known errors in the BIRTHDAT variable. Incorrect values for the variable BIRTHDAT were identified following the initial data collection on the ARIC cohort. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (BIRTHDAT) for Visit 1 and longitudinal

analyses. The corrected version could be used for cross-sectional analyses other than Visit 1 and instances where appropriate should be decided by the Investigator.

Type: Date

Algorithm: BIRTHDAT61 = V1CORBIR

Source variable(s): V1CORBIR

3.7 V6AGE61 (Visit 6 Age)

Description: Participant's age at the time of the visit 6 exam calculated from the BIRTHDAT variable.

Type: Numeric

Algorithm: If V6DATE61>.z and BIRTHDAT>.z then V6AGE61 = floor((intck('month', BIRTHDAT,V6DATE61)-(day(V6DATE61) < day(BIRTHDAT)))/12);

Source variable(s): BIRTHDAT (Date of Birth), V6DATE61

3.8 V6AGE62 (Corrected Visit 6 Age)

Description: Participant's age at the time of the visit 6 exam calculated from the BIRTHDAT61 variable. This variable is based on the corrected birthdate. The ARIC Executive Committee has recommended continuing to use the uncorrected variable (V6AGE61) 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 V6DATE61 > .z and BIRTHDAT61 > .z then V6AGE62 = floor((intck('month', BIRTHDAT61,V6DATE61) - (day(V6DATE61) < day(BIRTHDAT61)))/12);

Source variable(s): BIRTHDAT61 (Corrected Birthdate), V6DATE61

4. ANTHROPOMETRY AND BLOOD PRESSURE

4.1 BMI61 (V6 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 BMI61=missing;
Else BMI61= ANT4/(V6IN129/100)²

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

4.2 WSTHPR61 (V6 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
WSTHPR61=missing
Else WSTHPR61=(ANT10a/ANT10b)

Source variable(s): ANT10a, ANT10b

4.3 SYSTOLIC61 (V6 Mean Systolic BP of 2nd and 3rd Measurements)

Description: Mean of 2nd and 3rd systolic blood pressure measurements, consistent with V1 through V5

Type: Numeric

Algorithm: SYSTOLIC61=mean of SBP8 and SBP11
If SYSTOLIC61=missing then SYSTOLIC61=SBP14

Source variable(s): SBP8, SBP11, SBP14

4.4 DIASTOLIC61 (V6 Mean Diastolic BP of 2nd and 3rd Measurements)

Description: Mean of 2nd and 3rd diastolic blood pressure measurements, consistent with V1 through V5

Type: Numeric

Algorithm: DIASTOLIC61=mean of SBP9 and SBP12
 If DIASTOLIC61=missing then DIASTOLIC61=SBP15

Source variable(s): SBP9, SBP12, SBP15

4.5 PULSE61 (V6 Mean Pulse of 2nd and 3rd Measurements)

Description: Mean of 2nd and 3rd pulse measurements, consistent with V1 through V5

Type: Numeric

Algorithm: PULSE61=mean of SBP10 and SBP13
 If PULSE61=missing then PULSE61=SBP16

Source variable(s): SBP10, SBP13, SBP16

5. ALCOHOL USE

5.1 DRNKR61 (V6 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 DRNKR61=1;
Else if (ALC2= 'Y' and ALC3= 'N') then DRNKR61=2;
Else if (ALC2= 'N' and ALC3 in ('N', missing)) then DRNKR61=3;
Else if (ALC2=missing and ALC3= 'N') or (ALC2= 'Y' and ALC3=missing) then DRNKR61=4;
Else DRNKR61=missing.

Source variable(s): ALC2, ALC3

5.2 ETHANL61 (V6 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 (DRNKR61 in (2, 3) or ALC3='N') then ETHANL61=0;
Else if (DRNKR61 in (4, missing) and missing(ALC5a) and missing(ALC6a) and missing(ALC7a)) then ETHANL61=missing;
Else ETHANL61=(ALC5a x 10.8) + (ALC6a x 13.2)+(ALC7a x 15.1).

Source variable(s): ALC3, ALC5a, ALC6a, ALC7a, DRNKR61

5.3 CURDRK61 (V6 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 CURDRK61=1;
Else if ALC3='N' or (ALC2='N' and ALC3=missing) then CURDRK61=0;
Else CURDRK61=.T

Source variable(s): ALC2, ALC3

5.4 FORDRK61 (V6 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 FORDRK61=1;
Else if (ALC2 in ('Y', missing) and ALC3= 'Y') or (ALC2= 'N' and ALC3 in ('N', missing)) then FORDRK61=0;
Else FORDRK61=.T

Source variable(s): ALC2, ALC3

5.5 EVRDRK61 (V6 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 EVRDRK61=1;
Else if (ALC2= 'N' and ALC3 in ('N', missing)) then EVRDRK61=0;
Else EVRDRK61=.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 DERIVE61 dataset.

Temporary V5V6SMOKECIG (AFU Cigarette Smoker)

Description: derived from composite (AFU) dataset

Algorithm: =1 if any AFUcomp30_G="Y" and AFUcomp1_A is between V5DATE51 (located in DERIVE52) and V6DATE61
=0 if no AFUcomp30_G="Y" and at least one AFUcomp30_G='N' and AFUcomp1_A is between V5DATE51 (located in DERIVE52) and V6DATE61
=missing if all AFUcomp30_G is missing or if V5DATE51 and/or V6DATE61 is missing

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

6.1 CURSMK62 (V6 Current cigarette smoker)

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

Type: Numeric

Algorithm: If ALC1= 'Y' then CURSMK62 = 1
Else if ALC1= 'N' then CURSMK62 = 0
Else if ALC1=missing then CURSMK62 = .T

Source variable(s): ALC1

6.2 FORSMK62 (V6 Former cigarette smoker)

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

Type: Numeric

Algorithm: If CURSMK62=0 and (CIGT41=1 or CIGT41=2 or CIGT52=1 or CIGT52=2 or V5V6SMOKECIG=1) then FORSMK62=1

Else if CURSMK62=1
OR
(CURSMK62=0 and CIGT41=3 and CIGT52=3 and
V5V6SMOKECIG=0) then FORSMK62=0

Else if (CURSMK62=.T and (CIGT41=1 or CIGT41=2 or CIGT52=1 or
CIGT52=2 or V5V6SMOKECIG=1))
OR
(CURSMK62=0 and CIGT41 is missing and CIGT52 is missing and
V5V6SMOKECIG is missing) then FORSMK62=.T

Else if ALL variables CURSMK62, CIGT41, CIGT52, AND
V5V6SMOKECIG are missing then FORSMK62=.

Source variable(s): CURSMK62, CIGT41, CIGT52, V5V6SMOKECIG

6.3 EVRSMK62 (V6 Ever smoked cigarettes)

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

Type: Numeric

Algorithm: If (CURSMK62=1 or CIGT41=1 or CIGT41=2 or CIGT52=1 or
CIGT52=2 or V5V6SMOKECIG=1) then EVRSMK62=1

Else if (CURSMK62=0 and CIGT41=3 and CIGT52=3 and
V5V6SMOKECIG=0) then EVRSMK62=0

Else if (CURSMK62=0 and CIGT41 not 1 and CIGT41 not 2 and
CIGT52 not 1 and CIGT52 not 2 and V5V6SMOKECIG is missing)
OR

(CURSMK62=0 and CIGT41 is missing and CIGT52 is missing and
V5V6SMOKECIG not 1)

OR

(CURSMK62=missing and CIGT41=missing and CIGT52=missing and
V5V6SMOKECIG=0)

OR

(CURSMK62=missing and CIGT41=3 and CIGT52=3 and
V5V6SMOKECIG not 1) then EVRSMK62=.T;

Else if ALL variables CURSMK62, CIGT41, CIGT52, AND
V5V6SMOKECIG are missing then EVRSMK62=.

Source variable(s): CURSMK62, CIGT41, CIGT52, V5V6SMOKECIG

6.4 CIGT62 (V6 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 CURSMK62=1 then CIGT62=1

Else if CURSMK62=0 and (CIGT41=1 or CIGT41=2 or CIGT52=1 or CIGT52=2 or V5V6SMOKECIG=1) then CIGT62=2

Else if CURSMK62=0 and CIGT41=3 and CIGT52=3 and V5V6SMOKECIG=0 then CIGT62=3

Else if (CURSMK62=missing and (CIGT41=1 or CIGT41=2 or CIGT52=1 or CIGT52=2 or V5V6SMOKECIG=1)
OR
(CURSMK62=0 and CIGT41 is missing and CIGT52 is missing and V5V6SMOKECIG is missing) then CIGT62=4

Else if ALL variables CURSMK62, CIGT41, CIGT52, and V5V6SMOKECIG are missing then CIGT62=.

Source variable(s): CURSMK62, CIGT41, CIGT52, V5V6SMOKECIG

7. LABORATORY ANALYTES

The following definitions are temporary variables, defined here as reference for the following fasting derived variables. They are not found on the DERIVE61 dataset.

Derived from the V6 Biospecimen form.

Since we do not have the date when a ppt last ate, we'll have to make some assumptions:

1. The first event was always the eat_time, the second – always the draw-time, so the fasting_time should always be positive;
2. If both eat_time and draw_time are AM, or both are PM, and eat_time is less than draw_time, then we assume that both events happened on the same day and the fasting time is within 12 hours;
3. If both eat_time and draw_time are AM, or both are PM, but the eat_time is greater than the draw_time, then we assume that the eat_time was the day before than the draw_time, and the fasting time is more than 12 hours but less than 24 hours;
4. If the eat_time is AM and the draw_time is PM, then we assume that a ppt ate in the AM, and then had a blood draw in the PM of the same calendar day;
5. If the eat_time is PM and the draw_time is AM, then we assume that a ppt ate in the PM of the previous day, and then had a blood draw in the AM of the visit day.

Temporary EAT_TIME:

Algorithm: EAT_TIME=BIO6;

Temporary DRAW_TIME:

Algorithm: DRAW_TIME=BIO7;

Temporary FASTING_TIME:

Algorithm: if missing(BIO6) or missing(BIO7) then FASTING_TIME=.;
else if bio6=bio7 then FASTING_TIME=0;
else if DRAW_TIME > EAT_TIME then FASTING_TIME =
((DRAW_TIME/3600)-EAT_TIME/3600);
else if DRAW_TIME < EAT_TIME then FASTING_TIME =
((DRAW_TIME/3600+24)-EAT_TIME/3600);

7.1 FAST0861 (V6 Fasting time of 8 Hours or More)

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

Type: Numeric

Algorithm: If fasting_time = missing, then FAST0861=.T;
Else if .z<fasting_time<8 hours then FAST0861=0;

Else FAST0861=1;

Source variable(s): fasting_time (BIO6, BIO7, eat_time, draw_time)

7.2 FAST1261 (V6 Fasting Time of 12 Hours or more)

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

Type: Numeric

Algorithm: If fasting_time = missing then FAST1261=.T;
Else if .z<fasting_time<12 hours then FAST1261=0;
Else FAST1261=1;

Source variable(s): fasting_time (BIO6, BIO7, eat_time, draw_time)

7.3 TGLEFH61 (V6 Triglycerides less than or equal to 400 mg/dL)

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

Type: Numeric

Algorithm: If .<LIPF3b<=400 then TGLEFH61 = 1;
Else if LIPF3b>400 then TGLEFH61=0;
Else if LIPF3b=. then TGLEFH61=.T;

Source variable(s): LIPF3b

7.4 TCHSIU61 (V6 Total Cholesterol in SI Units)

Format: numeric continuous variable.

Type: Numeric

Algorithm: Create intermediate variables for use in SI unit changes.
CF_chol=0.02586;

TCHSIU61=LIPF1b*CF_chol.

Source variable(s): LIPF1b, CF_chol

7.5 HDLSIU61 (V6 HDL Cholesterol in SI Units)

Format: numeric continuous variable.

Type: Numeric

Algorithm: Create intermediate variables for use in SI unit changes.
CF_chol=0.02586;

HDLSIU61=LIPF2b*CF_chol

Source variable(s): LIPF2b, CF_chol

7.6 LDLSIU61 (V6 LDL Cholesterol in SI Units)

Format: numeric continuous variable.

Type: Numeric

Algorithm: Create intermediate variables for use in SI unit changes.
CF_chol=0.02586;

LDLSIU61=LIPF4b*CF_chol

Source variable(s): LIPF4b, CF_chol

7.7 TRGSIU61 (V6 Triglycerides in SI Units)

Format: numeric continuous variable.

Type: Numeric

Algorithm: Create intermediate variables for use in SI unit changes.
CF_trig=0.01129;

TRGSIU61=LIPF3b*CF_trig

Source variable(s): LIPF3b, CF_trig

7.8 GLUSIU61 (V6 Glucose in SI Units)

Format: numeric continuous variable.

Type: Numeric

Algorithm: Create intermediate variables for use in SI unit changes.
CF_gluc=0.05551;

GLUSIU61=CHEM5*CF_gluc

Source variable(s): CHEM5, CF_gluc

7.9 GLUSIU62 (V6 Fasting Glucose in SI Units, Fasting at least 8 hours (BIO7a="YES"))

Format: numeric continuous variable.

Type: Numeric

Algorithm: Create intermediate variables for use in SI unit changes.
CF_gluc=0.05551;

If BIO7a='Y' then GLUSIU62=CHEM5*CF_gluc
Else GLUSIU62=missing

Source variable(s): CHEM5, BIO7a, CF_gluc

7.10 LDL61 (V6 Recalculated LDL Cholesterol)

Format: continuous numeric variable

Type: Numeric

Algorithm: If (any of LIPF1b, LIPF2b, LIPF3b is missing OR LIPF3b>400) then
LDL61=missing;
Else LDL61=LIPF1b-LIPF2b-(LIPF3b/5)
If .z<LDL61<0 then LDL61=0 (set negative values to zero).

Source variable(s): LIPF1b, LIPF2b, LIPF3b

7.11 EGFR61 (Estimated glomerular filtration rate (mL/min/1.73m²) (CKD-EPI creatinine 2009))

Format: continuous variable

Type: Numeric

Algorithm: Calculate age (in years rounded to 1) at lab draw using birthdat and CHEM6B

If CHEM6>missing Then do:
IF GENDER="M" AND RACEGRP= "A, I, or W" then EGFR61 =
 $141 * \min(\text{CHEM6}/0.9, 1)^{-0.411} * \max(\text{CHEM6}/0.9, 1)^{-1.209} * 0.993^{\text{AGE}}$

ELSE IF GENDER = "M" AND RACEGRP= "B" then EGFR61 =
 $141 * \min(\text{CHEM6}/0.9, 1)^{-0.411} * \max(\text{CHEM6}/0.9, 1)^{-1.209} * 0.993^{\text{AGE}} * 1.159$

ELSE IF GENDER= "F" AND RACEGRP= "A, I, or W" then
EGFR61 = $141 * \min(\text{CHEM6}/0.7, 1)^{-0.329} * \max(\text{CHEM6}/0.7, 1)^{-1.209} * 0.993^{\text{AGE}} * 1.018$

ELSE IF GENDER= "F" AND RACEGRP= "B" then EGFR61 = $141 * \min(\text{CHEM6}/0.7, 1)^{-0.329} * \max(\text{CHEM6}/0.7, 1)^{-1.209} * 0.993^{\text{AGE}} * 1.018 * 1.159$

where AGE = age at lab draw (CHEM6b).

Source variable(s): BIRTHDAT, RACEGRP, GENDER, CHEM6, CHEM6b

7.12 EGFR61 (Estimated glomerular filtration rate (mL/min /1.73m²) (CKD-EPI cystatin equation 2012))

Format: continuous variable

Type: Numeric

Algorithm: Calculate age (in years rounded to 1) at lab draw using birthdat and CHEM12B

If CHEM12>missing Then do:
IF GENDER="M" then EGFR61 = $133 * \min(\text{CHEM12}/0.8, 1)^{-0.499} * \max(\text{CHEM12}/0.8, 1)^{-1.328} * 0.996^{\text{AGE}}$

ELSE IF GENDER="F" then EGFR61 =
 $133 * \min(\text{CHEM12}/0.8, 1)^{-0.499} * \max(\text{CHEM12}/0.8, 1)^{-1.328} * 0.996^{\text{AGE}} * 0.932$

where AGE = age at lab draw (CHEM12b).

Source variable(s): BIRTHDAT, RACEGRP, GENDER, CHEM12, CHEM12b

7.13 EGFR61 (Estimated glomerular filtration rate (mL/min/1.73m2) (CKD-EPI creatinine-cystatin equation 2012))

Format: continuous variable

Type: Numeric

Algorithm: Calculate age (in years rounded to 1) at lab draw using birthdat and minimum of (CHEM6B, CHEM12B)
If chem6>. and chem12>. Then do:

```
if GENDER="M" AND RACEGRP="A, I, or W"  
=135 * min(CHEM6/0.9,1)**(-0.207) * max(CHEM6/0.9,1)**(-0.601)  
*min(CHEM12/0.8,1)**(-0.375) * max(CHEM12/0.8,1)**(-0.711) *  
0.995**(AGE)
```

```
ELSE IF GENDER="M" AND RACEGRP="B"  
=135 * min(CHEM6/0.9,1)** (-0.207) * max(CHEM6/0.9,1)**(-0.601) *  
min(CHEM12/0.8,1)**(-0.375) * max(CHEM12/0.8,1)**(-0.711) *  
0.995**(AGE) * 1.08
```

```
ELSE IF GENDER="F" AND RACEGRP=" A, I, or W"  
=135 * min(CHEM6/0.7,1)**(-0.248) * max(CHEM6/0.7,1)**(-0.601) *  
min(CHEM12/0.8,1)**(-0.375) * max(CHEM12/0.8,1)**(-0.711) *  
0.995**(AGE) * 0.969
```

```
ELSE IF GENDER="F" AND RACEGRP="B"  
=135 * min(CHEM6/0.7,1)**(-0.248) * max(CHEM6/0.7,1)**(-0.601) *  
min(CHEM12/0.8,1)**(-0.375) * max(CHEM12/0.8,1)**(-0.711) *  
0.995**(AGE) * 0.969 * 1.08
```

where AGE = age at lab draw (min(CHEM6b,CHEM12b)).

Source variable(s): BIRTHDAT, RACEGRP, GENDER, CHEM6, CHEM6b, CHEM12, CHEM12b

8. DISEASE PREVALENCE

There are a number of variables in the Disease Prevalence section that utilize cohort surveillance information, through event year 2017, to derive disease prevalence. Event year 2017 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 DERIVE61 dataset.

Temporary MDDX_DIAB61

Algorithm: MDDX_DIAB61=1 if a participant reported being diagnosed during ARIC Follow-Up interviews with diabetes prior to the visit 6 data (V6DATE61). The composite dataset variables considered are AFUCOMP1_A, AFUCOMP7D_G, and AFUCOMP15_M.

Temporary INCSELFREPDM61

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<="31DEC2017"d then INCSELFREPDM61 = 1;
Else if AFUcomp7d_G, AFUcomp15_M are (N,") or (" ,N) respectively in all records for a single ID, where .z<afucomp1_A<="31DEC2017"d then INCSELFREPDM61 = 0;
Else INCSELFREPDM61 = .

8.1 DIABTS63 (V6 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 \geq 140) or (BIO7a ^= 'Y' and CHEM5 \geq 200) or (MSRF2 ^= 'T' and MSRF33c = 'Y') or MDDX_DIAB=1 then DIABTS63=1
Else if (.z<CHEM5<140) and MDDX_DIAB ^= 1 and MSRF33c ^= 'Y' then DIABTS63=0

Else DIABTS63=.T

Source variable(s): BIO7a, CHEM5, MDDX_DIAB, MSRF2, MSRF33c

8.2 DIABTS64 (V6 Diabetes - Lower Cutpoint 126 mg/dL)

Description: Diabetes variable defined as present if glucose value \geq 126 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 \geq 126) or (BIO7a ^= 'Y' and CHEM5 \geq 200) or (MSRF2 ^= 'T' and MSRF33c = 'Y') or MDDX_DIAB=1 then DIABTS64=1
Else if (.z<CHEM5<126) and MDDX_DIAB ^= 1 and MSRF33c ^= 'Y' then DIABTS64=0
Else DIABTS64=.T

Source variable(s): BIO7a, CHEM5, MDDX_DIAB, MSRF2, MSRF33c

8.3 DIABTS65 (V6 Diabetes Lab and Meds Only - Lower Cutpoint 126 mg/dL)

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

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

Type: Numeric

Algorithm: If (BIO7a = 'Y' and CHEM5 \geq 126) or (BIO7a ^= 'Y' and CHEM5 \geq 200) or (MSRF2 ^= 'T' and MSRF33c = 'Y') then DIABTS65=1
Else if (.z<CHEM5<126) and MSRF33c ^= 'Y' then DIABTS65=0
Else DIABTS65=.T

Source variable(s): BIO7a, CHEM5, MSRF2, MSRF33c

8.4 DIABTS66 (V6 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 (MSRF2 \neq 'T' and MSRF33c = 'Y') or MDDX_DIAB=1 then DIABTS66=1
Else if (.z < CHEM1 < 6.5) and MDDX_DIAB \neq 1 and MSRF33c \neq 'Y' then DIABTS66=0;
Else DIABTS66=.T.

Source variable(s): CHEM1, MDDX_DIAB, MSRF2, MSRF33c

8.5 DIABTS67 (V6 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 (MSRF2 \neq 'T' and MSRF33c='Y') or INCSELFREPDM61=1 or DIABMDCODE61=1 then DIABTS67=1
Else if INCSELFREPDM61 \neq 1 and MSRF33c \neq 'Y' and DIABMDCODE61 \neq 1 then DIABTS67=0
Else DIABTS67=.T

Source variable(s): MSRF2, MSRF33c, [STATUS61] INCSELFREPDM61, DIABMDCODE61

Myocardial Infarction (MI) Prevalence Variables

8.6 MDDXMI62 (V6 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 5 and visit 6.

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

Type: Numeric

Algorithm: If (AFUCOMP7a_G = 'Y' OR AFUCOMP11a_M = 'Y') AND V5DATE51 < AFUCOMP1_A (AFU DATE) < V6DATE61 then MDDXMI62=1
Else if all values of (AFUCOMP7a_G, AFUCOMP11a_M) for records between visit 5 date and visit 6 date are one of the following combinations (",U), (","), (U,") then MDDXMI62=.T
Else MDDXMI62=0

Source variable(s): AFUCOMP7a_G, AFUCOMP11a_M, V5DATE51, V6DATE61, AFUCOMP1_A

8.7 HXOFMI62 (V6 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 V6 data collection (31DEC2017).

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

Type: Numeric

Algorithm: If MDDXMI62=1 or (AFUcomp7_V1= 'Y') or (AFUcomp30_deceased_A='Y') or (AFUcomp30non_deceased_A='Y') then HXOFMI62=1
Else if over all records for a single ID the following value combinations are found for (MDDXMI62, AFUcomp7_V1,

AFUcomp30_deceased_A, AFUcomp30non_deceased_A): (.T, "", ""),
(.T, "", 'U', ""), (.T, "", "", 'U') then HXOFMI62=.T
Else HXOFMI62=0

Source variable(s): MDDXMI62, AFUCOMP7_V1, AFUCOMP30_deceased_A,
AFUcomp30non_deceased_A

Coronary Heart Disease (CHD) Prevalence Variables

8.8 PRVCHD61 (V6 Prevalent CHD before Visit 6)

Description: This variable is derived from the baseline status of CHD (PRVCHD05) and the closed event years of ARIC Cohort Surveillance data through 2017, where the events occurred prior to the participant's Visit 6.

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

Type: Numeric

Algorithm: PRVCHD61 = 1 if PRVCHD05 = 1 or (C7_IN_17SP = 1 and
. < C7_DATEISP < V6DATE61) or (C7_IN_17SP = 1 and
V6DATE61 = . and C7_DATEISP <= '15JUN2016'd)

PRVCHD61 = 0 if PRVCHD05 = 0 and ((C7_IN_17SP = 0 or
C7_DATEISP >= V6DATE61 > .) or (V6DATE61 = . and
C7_DATEISP > '15JUN2016'd))

ELSE PRVCHD61 = .T

Source variable(s): PRVCHD05, C7_IN_17SP, C7_DATEISP, V6DATE61

8.9 PRVCHD63 (V6 Prevalent CHD by end of Visit 6)

Description: This variable is derived from the baseline status of CHD (PRVCHD05) and the closed event years of ARIC Cohort Surveillance data through 2017, where the events occurred prior to 31DEC2017.

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

Type: Numeric

Algorithm: PRVCHD63 = 1 if PRVCHD05 = 1 or (C7_IN_17SP = 1 and
. < C7_DATEISP < '31DEC2017'd)

PRVCHD63 = 0 if PRVCHD05 = 0 and ((C7_IN_17SP = 0 or
C7_DATEISP >= '31DEC2017'd)

ELSE PRVCHD63 = .T

Source variable(s): PRVCHD05, C7_IN_17SP, C7_DATEISP

8.10 PRVCHD64 (V6 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 31DEC2017.

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

Type: Numeric

Algorithm: use AFUcomp: only for those records where .z < AFUcomp1_A <= '31DEC2017'd

PRVCHD64 = 1 if MDDXMI62 = 1 or (AFUcomp13a_G = 'Y') or (AFUcomp15a_G = 'Y')

PRVCHD64 = . if over all records for a single ID the following value combinations are found for (MDDXMI62, AFUcomp13a_G, AFUcomp15a_G):(.M or .), (" or 'U'), (" or 'U')

ELSE PRVCHD64 = 0

Source variable(s): AFUcomp1_A, MDDXMI62, AFUcomp13a_G, AFUcomp15a_G

Heart Failure (HF) Prevalence Variables

The heart failure (HF) variables included in this derived variable dictionary define HF prevalence at Visit 6. When conducting analyses of incident HF, it is important to note that the incident variable is available in the ARIC Cohort Surveillance dataset. The variable C7_INCHFxx 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.

The following definitions are temporary variables for use in the algorithms of the heart failure prevalence derived variables and are not included in DERIVE61.

Temporary HospHF_2005onward

Algorithm: For HFC17OCC1 records where
01JAN2005<=HFEVTDATE<V6DATE61
HospHF_2005onward=1, if CHF DIAG in ('A' 'B' 'C') for any record for SubjectID
HospHF_2005onward=0, otherwise

Temporary OnsetDate

Algorithm: Using PHF_180425 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<V6DATE61
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 C17CELB1 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 C17CELB1 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: In a temporary dataset

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&y7, 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_180425, 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_180425, 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_180425, 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<=v6date61 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

%macro selfreportHFmeds(dsn, med,medDt)

If &med='Y' then do;

srHFmed=1;

srHFmedDt=&medDt;

%mend;

%selfreportHFmeds(v1.msra, MSRA11, msra08d);

%selfreportHFmeds(v2.msrb, MSRB27, msrb24d);

%selfreportHFmeds(v3.msrd04, MSRC29, msrd24e);
 %selfreportHFmeds(v4.msrd04, MSRD31, msrd24e);
 %selfreportHFmeds(v5.msr, MSRF0A, msrf33h);
 %selfreportHFmeds(v6.msr, MSRF0A, msrf33h);
 %selfreportHFmeds(postv4.aful1104new, AFUL1, AFUL46D);
 %selfreportHFmeds(postv4.afum1104new, AFUM1, AFUM46D);
 %selfreportHFmeds(afu.afu_180425, AFU0a, AFU65D);

Temporary selfreportHFmeds

Algorithm: Keep records where missing<srHFmedDT<V6DATE61
 selfreportHFmeds=1, if srHFmed=1 for any record;
 selfreportHFmeds=0, otherwise

8.11 PREVDEFHF61 (V6 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 V6 visit) classified as Definite (A), Probable (B), or Chronic (C) HF; OR (2) Physician Heart Failure (PHF) Survey with HF onset date prior to V6 (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 V6 visit) classified as Definite (A), Probable (B), or Chronic (C) HF
2. Physician Heart Failure (PHF) Survey with HF onset date prior to V6 (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 V6DATE61 is not missing AND (HospHF_2005onward=1 OR HF_byPHF=1 OR HF_first428_pre2005=1) then PREVDEFHF61=1
 Else PREVDEFHF61=0

Source variables: V6DATE61, HospHF_2005onward, HF_byPHF, HF_first428_pre2005

8.12 PREVDEFPOSSH61 (V6 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 V6 visit) classified as Definite (A), Probable (B), or Chronic (C) HF; OR (2) Physician Heart Failure Survey with HF onset date prior to V6 (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 V6 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 V6. *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 V6 visit) classified as Definite (A), Probable (B), or Chronic (C) HF
2. Physician Heart Failure Survey with HF onset date prior to V6 (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 V6 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 V6

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

Using Temporary Variables:
If V6DATE61 is not missing AND (PREVDEFHF61=1 OR
HF_non1st428_pre2005=1 OR selfreportHF=1 OR
selfreportHFmeds=1) then PREVDEFPOSSH61=1
Else PREVDEFPOSSH61=0

Source variables: V6DATE61, PREVDEFHF61, HF_non1st428_pre2005, selfreportHF,
selfreportHFmeds

Stroke Prevalence Variables

8.13 PRVSTR61 (V6 Prevalent Stroke by the end of Visit 6)

Description: This variable is derived from the baseline status of stroke (HOM10D) and the closed event years of ARIC Surveillance data on the cohort.

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

Type: Numeric

Algorithm: PRVSTR61 = 1 if HOM10D = "Y" or (C7_IN17DP = 1 and . < C7_ED17DP <= V6DATE61) or (C7_IN17DP = 1 AND V6DATE61 = . and C7_ED17DP <= '31DEC2017'd)

PRVSTR61 = 0 if HOM10D = "N" and ((C7_IN17DP = 0 or C7_ED17DP > V6DATE61 > .) or (V6DATE61 = . and C7_ED17DP > '31DEC2017'd))

Else PRVSTR61 = .T

Source variable(s): HOM10D, C7_IN17DP, C7_ED17DP, V6DATE61

8.14 PRVSTR62 (V6 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 31DEC2017.

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 PRVSTR62=1
Else if over all records within a single ID the following value combinations are found for (AFUcomp29_A, AFUcomp8b_K): (","), ("U), (U,") then PRVSTR62=missing
Else PRVSTR62=0

Source variable(s): AFUcomp29_A, AFUcomp8b_K

Hypertension Prevalence Variables

8.15 HYPERT64 (V6 Hypertension, definition 4 (DIASTOLIC61 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 (DIASTOLIC61 ≥ 90) or (MSRF2 \neq 'T' and MSRF33d = 'Y') then HYPERT64 = 1
Else if (0 < DIASTOLIC61 < 90) and (MSRF33d = 'N' or (MSRF33d = missing and MSRF2 = 'T')) then HYPERT64=0
Else HYPERT64 = missing

Source variable(s): DIASTOLIC61, MSRF2, MSRF33d

8.16 HYPERT65 (V6 Hypertension, definition 5 (SYSTOLIC61 GE 140 or DIASTOLIC61 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 (DIASTOLIC61 ≥ 90) or (SYSTOLIC61 ≥ 140) or (MSRF2 \neq 'T' and MSRF33d = 'Y') then HYPERT65 = 1
Else if (0 < DIASTOLIC61 < 90) and (0 < SYSTOLIC61 < 140) and (MSRF33d = 'N' or (MSRF33d = missing and MSRF2 = 'T')) then HYPERT65 = 0
Else HYPERT65 = .T

Source variable(s): DIASTOLIC61, SYSTOLIC61, MSRF2, MSRF33d

8.17 HYPERT66 (V6 Hypertension, definition 6 (SYSTOLIC61 GE 160 or DIASTOLIC61 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 (DIASTOLIC61 ≥ 95) or (SYSTOLIC61 ≥ 160) or (MSRF2 \neq 'T' and MSRF33d = 'Y') then HYPERT66 = 1
Else if (0 < DIASTOLIC61 < 95) and (0 < SYSTOLIC61 < 160) and (MSRF33d = 'N' or (MSRF33d = missing and MSRF2 = 'T')) then HYPERT66 = 0
Else HYPERT66 = .T

Source variable(s): DIASTOLIC61, SYSTOLIC61, MSRF2, MSRF33d

8.18 HYPERT67 (V6 Hypertension, definition 7 (SYSTOLIC61 GE 150 or DIASTOLIC61 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 (DIASTOLIC61 ≥ 90) or (SYSTOLIC61 ≥ 150) or (MSRF2 \neq 'T' and MSRF33d = 'Y') then HYPERT67 = 1
Else if (0 < DIASTOLIC61 < 90) and (0 < SYSTOLIC61 < 150) and (MSRF33d = 'N' or (MSRF33d = missing and MSRF2 = 'T')) then HYPERT67 = 0
Else HYPERT67 = .T

Source variable(s): DIASTOLIC61, SYSTOLIC61, MSRF2, MSRF33d

9. MEDICATION USE

The following definitions are temporary variables, defined here as reference for the following medication-related, derived variables. They are not found on the DERIVE61 dataset.

Temporary ALLMISS

Algorithm: Do over MSRF#a2 where # = 5 to 29:
If any MSRF#a2 >” then ALLMISS=0, else ALLMISS=1

Temporary MSRF#a2_sub10:

Algorithm: Do over MSRF#a2 where # = 5 to 29:
MSRF#a2_sub10=substr(MSRF#a2,1,10)

Temporary MSRF#a2_sub6:

Algorithm: Do over MSRF#a2 where # = 5 to 29:
MSRF#a2_sub6=substr(MSRF#a2,1,6)

Temporary MSRF#a2_sub4:

Algorithm: Do over MSRF#a2 where # = 5 to 29:
MSRF#a2_sub4=substr(MSRF#a2,1,4)

Temporary MSRF#a2_sub2:

Algorithm: Do over MSRF#a2 where # = 5 to 29:
MSRF#a2_sub2=substr(MSRF#a2,1,2)

Temporary FOUNDCHOL61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (771030,390000-399999) then
FOUNDCHOL61=1, else FOUNDCHOL61=0.

Temporary FOUNDCHOL62:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (331000, 332000, 340000, 363000, 369920,
372000, 376000, 379900, 379910) then FOUNDCHOL62=1, else
FOUNDCHOL62=0.

Temporary FOUNDHYPT61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (330000-339999 or 340000-349999 or 360000-
369999 or 370000-379999) or (MSRF33d = 'Y') then
FOUNDHYPT61=1, else FOUNDHYPT61=0.

Temporary FOUNDSTAT61:

Algorithm: Do over MSRF#a2_sub4 where # = 5 to 29:
If MSRF#a2_sub4 equal 3940 then FOUNDSTAT61=1, else
FOUNDSTAT61=0.

Temporary FOUNDACOAG61:

Algorithm: Do over MSRF#a2_sub2 where # = 5 to 29:
If MSRF#a2_sub2 equal 83 then FOUNDACOAG61=1, else
FOUNDACOAG61=0.

Temporary FOUNDASP61:

Algorithm: Do over MSRF#a2_sub4 where # = 5 to 29:
If MSRF#a2_sub4 IN (6410, 6499, 6599, 6420) then
FOUNDASP61=1, else FOUNDASP61=0.

Temporary FOUNDANTIANX61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (570000, 571000, 571020, 572000) then
FOUNDANTIANX61=1, else FOUNDANTIANX61=0.

Temporary FOUNDANTIPSYCH61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (590000, 590700, 591000, 591500, 592000,
593000, 594000, 595000) then FOUNDANTIPSYCH61=1,
FOUNDANTIPSYCH61=0.

Temporary FOUNDHYPNOT61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (600000, 601000, 602000, 602010, 602040,
603000, 603099, 609900) then FOUNDHYPNOT61=1,
FOUNDHYPNOT61=0.

Temporary FOUNDANTICONV61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (720000, 721000, 721200) then
FOUNDANTICONV61=1, FOUNDANTICONV61=0.

Temporary FOUNDANTIDEM61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (620000, 620500, 620610, 620540) then
FOUNDANTIDEM61=1, FOUNDANTIDEMT61=0.

Temporary FOUNDCNSALT61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF#a2_sub6 in (571000, 932000, 590000, 590700, 591000,
591500, 592000, 593000, 594000, 595000, 601000, 602000, 602010)
then FOUNDCNSALT 61=1, FOUNDCNSALT 61=0.

Temporary FOUNDDIAB61:

Algorithm: Do over MSRF#a2_sub2 where # = 5 to 29:
If MSRF#a2_sub2=27 then FOUNDDIAB61=1, FOUNDDIAB61=0.

Temporary FOUNDBETA61:

Algorithm: Do over MSRF#a2_sub2 and MSRF#a2 where # = 5 to 29:
If MSRF_a2_sub2{i}=33 AND MSRF_a2_sub10{i}^=3310005010 then
FOUNDBETA61=1, else FOUNDBETA61=0.

Temporary FOUNDANGINH61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF_a2_sub6{i}=361000 then FOUNDANGINH61=1; else
FOUNDANGINH61=0.

Temporary FOUNDANGIANT61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF_a2_sub6{i}=361500 then FOUNDANGIANT61=1; else
FOUNDANGIANT61=0.

Temporary FOUNDALDANT61:

Algorithm: Do over MSRF#a2 where # = 5 to 29:
If MSRF_a2_sub10{i} IN (3625000000, 3750002000, 3799000220)
then FOUNDALDANT61=1; else FOUNDALDANT61=0.

Temporary FOUNDLOOPDIU61:

Algorithm: Do over MSRF#a2_sub6 where # = 5 to 29:
If MSRF_a2_sub6{i}=372000 then FOUNDLOOPDIU61=1; else
FOUNDLOOPDIU61=0.

Temporary FOUNDDIG61:

Algorithm: Do over MSRF#a2 where # = 5 to 29:
If MSRF_a2{i}=3120001000 then FOUNDDIG61=1; else
FOUNDDIG61=0.

9.1 CHOLMDCODE61 (V6 Cholesterol Lowering Medication in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDCHOL61=1 then CHOLMDCODE61=1

Else if FOUNDCHOL61=0 AND ((ALLMISS=1 AND MSRF2= 'T') OR (ALLMISS=0)) then CHOLMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then CHOLMDCODE61=.T

Else CHOLMDCODE61=.

Source variable(s): FOUNDCHOL61, ALLMISS, MSRF2

9.2 CHOLMDCODE62 (V6 Medications Which Secondarily Affect Cholesterol in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDCHOL62=1 then CHOLMDCODE62=1

Else if FOUNDCHOL62=0 AND ((ALLMISS=1 AND MSRF2= 'T') OR (ALLMISS=0)) then CHOLMDCODE62=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then CHOLMDCODE62=.T

Else CHOLMDCODE62=.

Source variable(s): FOUNDCHOL62, ALLMISS, MSRF2

9.3 HYPTMD61 (V6 Hypertension Medications in Past 4 Weeks: Self-reported)

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

Type: Numeric

Algorithm: If (MSRF2 NE 'T') and (MSRF33D='Y') then HYPTMD61=1;
Else if (MSRF2='T' and MSRF33D='') OR MSRF33D='N' then HYPTMD61 = 0;

Else If ((MSRF2 NE 'T') and (MSRF33D='U' or MSRF33D = "")) or
((MSRF2='T') and (MSRF33D = 'Y' or MSRF33D='U')) then
HYPTMD61=.T;

Source variable(s): MSRF2, MSRF33D

9.4 HYPTMDCODE61 (V6 Hypertension Lowering Medication in Past 4 weeks - Using Medi-Span GPI code)

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

Type: Numeric

Algorithm: (From UC4688 – V4)
If FOUNDHYP61=1 OR (MSRF2 NE 'T') and (MSRF33D='Y') then
HYPTMDCODE61=1

Else if FOUNDHYP61=0 AND ((ALLMISS=1 AND MSRF2= 'T') OR
(ALLMISS=0) OR (MSRF2= 'T' and MSRF33D="") OR (MSRF33D=
'N')) then HYPTMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2="") then
HYPTMDCODE61=.T

Else HYPTMDCODE61=.

Source variable(s): FOUNDHYP61, ALLMISS, MSRF2, MSRF33D

9.5 STATINCODE61 (V6 Statin Use in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4892 – V4)
If FOUNDSTAT61=1 then STATINCODE61=1

Else if FOUNDSTAT61=0 AND ((ALLMISS=1 AND MSRF2='T') OR
(ALLMISS=0)) then STATINCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then
STATINCODE61=.T

Else STATINCODE61=.

Source variable(s): FOUNDSTAT61, ALLMISS, MSRF2

9.6 ANTICOAGCODE61 (V6 Anticoagulant Use in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4892 – V4)
If FOUNDACOAG61=1 then ANTICOAGCODE61=1

Else if FOUNDACOAG61=0 AND ((ALLMISS=1 AND MSRF2= 'T')
OR (ALLMISS=0)) then ANTICOAGCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
ANTICOAGCODE61=.T

Else ANTICOAGCODE61=.

Source variable(s): FOUNDACOAG61, ALLMISS, MSRF2

9.7 ASPIRINCODE61 (V6 Aspirin Use in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4892 – V4)
If FOUNDASP61=1 then ASPIRINCODE61=1

Else if FOUNDASP61=0 AND ((ALLMISS=1 AND MSRF2= 'T') OR
(ALLMISS=0)) then ASPIRINCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
ASPIRINCODE61=.T

Else ASPIRINCODE61=.

Source variable(s): FOUNDASP61, ALLMISS, MSRF2

9.8 **ANTIANXMDCODE61 (V6 Antianxiety Medication in past 4 weeks - Using Medi-Span GPI Code)**

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDANTIANX61=1 then ANTIANXMDCODE61=1

Else if FOUNDANTIANX61=0 AND ((ALLMISS=1 AND MSRF2= 'T')
OR (ALLMISS=0)) then ANTIANXMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
ANTIANXMDCODE61=.T

Else ANTIANXMDCODE61=.

Source variable(s): FOUNDANTIANX61, ALLMISS, MSRF2

9.9 **ANTIPSYCHMDCODE61 (V6 Antipsychotic Medication in past 4 weeks - Using Medi-Span GPI Code)**

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDANTIPSYCH61=1 then ANTIPSYCHMDCODE61=1

Else if FOUNDANTIPSYCH61=0 AND ((ALLMISS=1 AND
MSRF2='T') OR (ALLMISS=0)) then ANTIPSYCHMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
ANTIPSYCHMDCODE61=.T

Else ANTIPSYCHMDCODE61=.

Source variable(s): FOUNDANTIPSYCH61, ALLMISS, MSRF2

9.10 HYPNOTMDCODE61 (V6 Hypnotic/Sedative Medication in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDHYPNOT61=1 then HYPNOTMDCODE61=1

Else if FOUNDHYPNOT61=0 AND ((ALLMISS=1 AND MSRF2= 'T')
OR (ALLMISS=0)) then HYPNOTMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
HYPNOTMDCODE61=.T

Else HYPNOTMDCODE61=.

Source variable(s): FOUNDHYPNOT61, ALLMISS, MSRF2

9.11 ANTICONVMDCODE61 (V6 Anticonvulsant Medication in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDANTICONV61=1 then ANTICONVMDCODE61=1

Else if FOUNDANTICONV61=0 AND ((ALLMISS=1 AND MSRF2= 'T')
OR (ALLMISS=0)) then ANTICONVMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
ANTICONVMDCODE61=.T

Else ANTICONVMDCODE61=.

Source variable(s): FOUNDANTICONV61, ALLMISS, MSRF2

9.12 ANTIDEMMDCODE61 (V6 Antidementia/Nootropic Medication in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDANTIDEM61=1 then ANTIDEMMDCODE61=1

Else if FOUNDANTIDEM61=0 AND ((ALLMISS=1 AND MSRF2= 'T')
OR (ALLMISS=0)) then ANTIDEMMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
ANTIDEMMDCODE61=.T

Else ANTIDEMMDCODE61=.

Source variable(s): FOUNDANTIDEM61, ALLMISS, MSRF2

9.13 CNSALTMDCODE61 (V6 CNS Altering Medication in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: (From UC4735 – V4)
If FOUNDCNSATL61=1 then CNSALTMDCODE61=1

Else if FOUNDCNSATL61=0 AND ((ALLMISS=1 AND MSRF2= 'T')
OR (ALLMISS=0)) then CNSALTMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then
CNSALTMDCODE61=.T

Else CNSALTMDCODE61=.

Source variable(s): FOUNDCNSATL61, ALLMISS, MSRF2

9.14 DIABMDCODE61 (V6 Diabetic Medications in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDDIAB61=1 then DIABMDCODE61=1

Else if FOUNDDIAB61=0 AND ((ALLMISS=1 AND MSRF2= 'T') OR (ALLMISS=0)) then DIABMDCODE61=0

Else if ALLMISS=1 AND (MSRF2= 'F' OR MSRF2='') then DIABMDCODE61=.T

Else DIABMDCODE61=.

Source variable(s): FOUNDDIAB61, ALLMISS, MSRF2

9.15 BETAMDCODE61 (V6 Beta-Blocker in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDBETA61=1 then BETAMDCODE61=1

Else if FOUNDBETA61=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then BETAMDCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then BETAMDCODE61=.T

Else BETAMDCODE61=.

Source variable(s): FOUNDBETA61, ALLMISS, MSRF2

9.16 ANGINHMDCODE61 (V6 Angiotensin converting enzyme inhibitor in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDANGINH61=1 then ANGINHMDCODE61=1

Else if FOUNDANGINH61=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then ANGINHMDCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANGINHMDCODE61=.T

Else ANGINHMDCODE61=.

Source variable(s): FOUNDANGINH61, ALLMISS, MSRF2

9.17 ANGIANTMDCODE61 (V6 Angiotensin II receptor antagonists in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDANGANT61=1 then ANGANTMDCODE61=1

Else if FOUNDANGANT61=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then ANGANTMDCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ANGANTMDCODE61=.T

Else ANGANTMDCODE61=.

Source variable(s): FOUNDANGANT61, ALLMISS, MSRF2

9.18 ALDANTMDCODE61 (V6 Aldosterone Antagonist in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDALDANT61=1 then ALDANTMDCODE61=1

Else if FOUNDALDANT61=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then ALDANTMDCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then ALDANTMDCODE61=.T

Else ALDANTMDCODE61=.

Source variable(s): FOUNDALDANT61, ALLMISS, MSRF2

9.19 LOOPDIUMDCODE61 (V6 Loop Diuretic in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDLOOPDIU61=1 then LOOPDIUMDCODE61=1

Else if FOUNDLOOPDIU61=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then LOOPDIUMDCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then LOOPDIUMDCODE61=.T

Else LOOPDIUMDCODE61=.

Source variable(s): FOUNDLOOPDIU61, ALLMISS, MSRF2

9.20 DIGMDCODE61 (V6 Digoxin in past 4 weeks - Using Medi-Span GPI Code)

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

Type: Numeric

Algorithm: If FOUNDDIG61=1 then DIGMDCODE61=1

Else if FOUNDDIG61=0 AND ((ALLMISS=1 AND MSRF2='T') OR (ALLMISS=0)) then DIGMDCODE61=0

Else if ALLMISS=1 AND (MSRF2='F' OR MSRF2='') then DIGMDCODE61=.T

Else DIGMDCODE61=.

Source variable(s): FOUNDDIG61, ALLMISS, MSRF2

10. PHYSICAL ACTIVITY

10.1 SPRT_I61 (V6 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	Y

	value	
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 $I_2 = I2_1 + I2_2 + I2_3 + I2_4$: sum of four simple sports scores.

Note:

If PAC5='N' then $I2_2 = 0$

If PAC9='N' then $I2_3 = 0$

If PAC13='N' then $I2_4 = 0$

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

If PAC1='N' then $I2 = 1$ else

If $0 \leq I_2 < 0.01$ then $I2 = 1$

If $0.01 \leq I_2 < 4$ then $I2 = 2$

If $4 \leq I_2 < 8$ then $I2 = 3$

If $8 \leq I_2 < 12$ then $I2 = 4$

If $12 \leq I_2$ then $I2 = 5$

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_I61= (I2+I3+I4+I5)/4

If I2 or I3 or I4 or I5 is missing, then SPRT_I61=.T

10.2 LISR_I62 (V6 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

$LISR_I62 = (I6 + I7 + I8 + ((I7 + I8) / 2)) / 4$

If I6 or I7 or I8 is missing, then $LISR_I62 = .T$

11. 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.

11.1 SPPBCS61 (V6 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 >= 60) then SPPBCS61=0;
Else if (16.70 <= PFX2b_DER < 60) then SPPBCS61=1
Else if (13.70 <= PFX2b_DER < 16.70) then SPPBCS61=2
Else if (11.20 <= PFX2b_DER < 13.70) then SPPBCS61=3
Else if (. < PFX2b_DER < 11.20) then SPPBCS61=4
Else SPPBCS61=.

Source variable(s): PFX1, PFX2, PFX2b_DER

11.2 SPPBST61 (V6 Physical Function Semi Tandem Stand)

Format: integer variable

Type: Numeric

Algorithm: If (PFX3 in (2,3,4)) then SPPBST61=0
Else if (PFX3=5) then SPPBST61=1
Else SPPBST61=.

Source variable(s): PFX3

11.3 SPPBSBS61 (V6 Physical Function Side-by-Side Stand)

Format: integer variable

Type: Numeric

Algorithm: If (PFX4 in (2,3,4)) then SPPBSBS61=0;
Else if (PFX3=5 OR PFX4=5) then SPPBSBS61=1;
Else SPPBSBS61=.

Source variable(s): PFX3, PFX4

11.4 SPPBTS61 (V6 Physical Function Tandem Stand)

Format: integer variable

Type: Numeric

Algorithm: If max(PFX5, PFX6) in (2,3,4) then SPPBTS61=0;
else if $3 \leq \max(\text{PFX5a_DER}, \text{PFX6a_DER}) < 10$ then SPPBTS61=1;
else if max(PFX5, PFX6) in (5) then SPPBTS61 = 2;
else SPPBTS61=.;

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

11.5 SPPBBAL61 (V6 Physical Function Summary Balance Score)

Format: integer variable

Type: Numeric

Algorithm: SPPBBAL61=sum(of SPPBST61,SPPBSBS61,SPPBTS61);

Source variable(s): SPPBSBS61, SPPBST61, SPPBTS61

11.6 WALK4M61 (V6 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 WALK4M61=.T;

Else
WALK4M61=min(PFX7a_der,PFX7b_der,PFX8a_der,PFX8b_der);

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

11.7 WALKAID61 (V6 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 WALK4M61>.T and (WALK4M61=PFX7a_der or
WALK4M61=PFX8a_der) then WALKAID61 = 1;
Else if WALK4M61>.T then WALKAID61 = 0;
Else WALKAID61=.T;

Source variable(s): PFX7a_der, PFX8a_der, WALK4M61

11.8 WALK4M62 (V6 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: WALK4M62= MAX((PFX7A_DER+PFX8A_DER)/2, (PFX7B_DER +
PFX8B_DER)/2)

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

11.9 WALKAID62 (V6 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 WALK4M62>.T and (PFX7=3 and PFX8=3) then WALKAID62 = 1;
Else if WALK4M62>.T then WALKAID62=0;
Else WALKAID62=.T;

Source variable(s): PFX7, PFX8, WALK4M62

11.10 SPPB4M61 (V6 Physical Function 4 Meter Walk Score)

Format: integer variable (0-4)

Type: Numeric

Algorithm: If max(PFX7,PFX8) = 2 then SPPB4M61 = 0;
Else if (WALK4M61> 8.70) SPPB4M61 = 1;
Else if (6.21 <= WALK4M61<= 8.70) then SPPB4M61 = 2;
Else if (4.82 <= WALK4M61< 6.21) then SPPB4M61= 3;
Else if (.z < WALK4M61< 4.82) then SPPB4M61 = 4;
Else SPPB4M61= .T ;

Source variable(s): PFX7, PFX8, WALK4M61

11.11 SPPB61 (V6 Short Physical Performance Summary Battery Score)

Format: integer variable

Type: Numeric

Algorithm: SPPB61=sum(of SPPBCS61,SPPBBAL61,SPPB4M61);

Source variable(s): SPPB4M61, SPPBBAL61, SPPBCS61

11.12 GRIPBEST61 (V6 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
GRIPBEST61=max(PFX11b,PFX11c);

Source variable(s): PFX10a, PFX11b, PFX11c

11.13 GRIPMEAN61 (V6 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
GRIPMEAN61=(PFX11b+PFX11c)/2;

Source variable(s): PFX10a, PFX11b, PFX11c

11.14 V5V6WTDELTA61 (% of V5 weight change from V5 to V6 (neg val means loss) – frailty weight loss component)

Description: The change in weight from visit 5 to visit 6 is calculated and presented as the % of visit 5 weight.

Format: continuous variable (0-99, %)

Type: Numeric

Algorithm: $((ant4-v5ant4)/v5ant4)*100$, where v5ant4 = ant4 from visit 5 and ant4=ant4 from visit 6

Source variable(s): ANT4, V5ANT4

11.15 WALKSPEED15FT61 (Time in seconds used to walk 15ft – frailty slowness component)

Description: The physical function form collects data on times to walk 4 meters. The WALKSPEED15FT61 variable uses the 4m walk rate to calculate the time in seconds needed to walk 15ft.

Format: numeric continuous variable

Type: Numeric

Algorithm: $WALKSPEED15FT61 = \text{MIN}((15/3.28084) * (pfx7a_der/4), (15/3.28084) * (pfx7b_der/4), (15/3.28084) * (pfx8a_der/4), (15/3.28084) * (pfx8b_der/4))$

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

11.16 V6CANCER61 (Reported a cancer site during an ARIC follow-up interview in the time from 06-15-2016 to the V6date61 (V6 visit date))

Description: Indicator used as proxy measure for having cancer at V6.

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

Type: Numeric

Algorithm: The V6CANCER61 is a proxy measure derived from ARIC follow-up data. If a PPT reported a cancer site during their follow-up interview that occurred anytime between June 15, 2016 and the PPT visit date then the variable was set to 1. If the PPT was interviewed for ARIC follow-up during that time and did not report a cancer site then the variable was set to 0, otherwise the variable was set to missing.

Source variable(s):

11.17 TR1WALK4MSP61 (V6 4M Walking Speed for Trial 1 (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $TR1WALK4MSP61 = 4 / (\text{max}(PFX7a_der, PFX7b_der))$

Source variable(s): PFX7a, PFX7b

11.18 TR2WALK4MSP61 (V6 4M Walking Speed for Trial 2 (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $TR2WALK4MSP61 = 4 / (\max(PFX8a_der, PFX8b_der))$

Source variable(s): PFX8a, PFX8b

11.19 AVGWALK4MSP61 (V6 Average 4M Walking Speed (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $AVGWALK4MSP61 = \text{mean}(TR1WALK4MSP61, TR2WALK4MSP61)$

Source variable(s): TR1WALK4MSP61, TR2WALK4MSP61

11.20 MINWALK4MSP61 (V6 Fastest 4M Walking Speed for Both Trials (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: $MINWALK4MSP61 = \min(TR1WALK4MSP61, TR2WALK4MSP61)$;

Source variable(s): TR1WALK4MSP61, TR2WALK4MSP61

11.21 UNABLETOWALK61 (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 UNABLETOWALK61=NULL
Else if PFX7=2 and PFX8 = missing or 2 then UNABLETOWALK61=1

Else UNABLETOWALK61=0

Source variable(s): PFX7, PFX8

11.22 UNINTEND_WTLOSS61 (V6 Unintentional Weight Loss)

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

Type: Numeric

Algorithm: If tmw1=1 and tmw3=0 then UNINTEND_WTLOSS61=1;
Else if tmw1=1 then UNINTEND_WTLOSS61=0;

Source variable(s): TMW1, TMW3

11.23 TMW_TOTFT61 (V6 Total Feet Walked in 2-Minute Walk)

Format: continuous variable

Type: Numeric

Algorithm: $TMW_TOTFT61 = \text{sum}((tmw8 * 50), tmw9)$;

Source variable(s): TMW8, TMW9

11.24 TMW_COMPSPEEDFTPERSEC61 (V6 TMW Speed for Completers (ft/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=5
 $TMW_COMPSPEEDFTPERSEC61 = tmw_totft61 / 120$;

Source variable(s): TMW11, TMW_TOTFT61

11.25 TMW_COMPSPEEDMPERSEC61 (V6 TMW Speed for Completers (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=5
 $TMW_COMPSPEEDMPERSEC61 = tmw_totft61 * 0.3048 / 120$

Source variable(s): TMW11, TMW_TOTFT61

11.26 TMW_NONCOMPSECWALK61 (V6 TMW Seconds Walking for Noncompleters)

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=4
 $TMW_NONCOMPSECWALK61 = \text{sum}((tmw12a * 60), tmw12b)$

Source variable(s): TMW11, TMW12a, TMW12b

11.27 TMW_NONCOMPSPEEDFTPERS61 (V6 TMW Speed for Noncompleters (ft/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=4 and
 $tmw_noncompsecwalk61 > 0$
 $TMW_NONCOMPSPEEDFTPERS61 = tmw_totft61 / tmw_noncompsecwalk61$

Source variable(s): tmw11, tmw_noncompsecwalk61, tmw_totft61

11.28 TMW_NONCOMPSPEEDMPERS61 (V6 TMW Speed for Noncompleters (m/sec))

Format: continuous variable

Type: Numeric

Algorithm: Calculate if tmw_pres=1 and tmw11=4 and
 $tmw_noncompsecwalk61 > 0$
 $TMW_NONCOMPSPEEDMPERS61 = tmw_totft61 * 0.3048 / tmw_noncompsecwalk61$

Source variable(s): tmw11, tmw_noncompsecwalk61, tmw_totft61

11.29 PAQ_LIMITEDFUNCTION61 (V6 PAQ Limited Function)

Description: Indicator variable that is set to 1 (Yes) when the PPT indicates they need assistance for items listed on the Physical Abilities Questionnaire (PAQ).

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: PAQ_LIMITEDFUNCTION61 = (('B'<=paq1<='D') OR ('B'<=paq2<='D') OR ('B'<=paq3<='D') OR ('B'<=paq4<='D') OR ('B'<=paq5<='D') OR ('B'<=paq6<='D') OR ('B'<=paq7<='D') OR ('B'<=paq8<='D') OR ('B'<=paq9<='D') OR ('B'<=paq10<='D') OR ('B'<=paq11<='D') OR ('B'<=paq12<='D') OR (paq13=1) OR (paq14=1) OR (paq15=1) OR (paq16=1) OR (paq17=1))

Source variable(s): PAQ1, PAQ2, PAQ3, PAQ4, PAQ5, PAQ6, PAQ7, PAQ8, PAQ9, PAQ10, paq11, paq12, paq13, paq14, paq15, paq16, paq17

11.30 PAQ_GOODFUNCTION61 (V6 PAQ Good Function)

Description: Indicator variable that is set to 1 (Yes) when the PPT indicates they need NO assistance for items listed on the Physical Abilities Questionnaire (PAQ).

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: PAQ_GOODFUNCTION61 = ((paq1='A') AND (paq2='A') AND (paq3='A') AND (paq4='A') AND (paq5='A') AND (paq6='A') AND (paq7='A') AND (paq8='A') AND (paq9='A') AND (paq10='A') AND (paq11='A') AND (paq12='A') AND (paq13=0) AND (paq14=0) AND (paq15=0) AND (paq16=0) AND (paq17=0))

Source variable(s): PAQ1, PAQ2, PAQ3, PAQ4, PAQ5, PAQ6, PAQ7, PAQ8, PAQ9, PAQ10, PAQ11, PAQ12, PAQ13, PAQ14, PAQ15, PAQ16, PAQ17

11.31 EXHAUST61 (V6 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: EXHAUST61=1, if (CES3=2 OR CES3=3) OR (CES11=2 OR CES11=3)
Else EXHAUST61= NULL, if CES3= NULL AND CES11= NULL
ELSE EXHAUST61=0

Source variable(s): CES2, CES3, CES11

11.32 LOWENERGYCOMP61 (V6 Lowest quintile of SPRT_i61 - 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: LOWENERGYCOMP61=1, if (<SPRT_I61<1.75 AND GENDER='F')
OR (SPRT_I61<2.00 AND GENDER='M')

LOWENERGYCOMP61=0, if (<SPRT_I61>=1.75 AND GENDER='F')
OR (SPRT_I61>=2.00 AND GENDER='M')

LOWENERGYCOMP61=NULL, if gender=NULL or SPRT_I61=NULL

Source variable(s): SPRT_I61, gender

11.33 WTLOSSCOMPA61 (V6 Lost >5% weight or Low BMI (<18.5) – frailty weight loss component for 61a 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: WTLOSSCOMP61=1, if ($.<V5V6WTDELTA61 \leq -5$) OR ($.<BMI61 < 18.5$)

WTLOSSCOMP61=0, if ($V5V6WTDELTA61 > -5$) AND ($BMI61 \geq 18.5$)

WTLOSSCOMP61=NULL, if V5V6WTDELTA61 and BMI61 are NULL

Source variable(s): V5V6WTDELTA61, BMI61

11.34 WTLOSSCOMP61 (V6 Lost >10% weight or Low BMI (<18.5) – frailty weight loss component for 61b 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: WTLOSSCOMP61=1, if ($.<V5V6WTDELTA61 \leq -10$) OR ($.<BMI61 < 18.5$)

WTLOSSCOMP61=0, if ($V5V6WTDELTA61 > -10$) AND ($BMI61 \geq 18.5$)

WTLOSSCOMP61=NULL, if V5V6WTDELTA61 and BMI61 are NULL

Source variable(s): V5V6WTDELTA61, BMI61

11.35 WALKSPEEDCOMP61 (V6 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: WALKSPEEDCOMP61=1:

Males:

IF (gender = 'M' AND V6IN129 <=173 AND Walkspeed15ft61>= 7) OR
IF (gender = 'M' AND V6IN129 > 173 AND Walkspeed15ft61>= 6) OR

Females:

IF (gender = 'F' AND V6IN129 <=159 AND Walkspeed15ft61>= 7) OR
IF (gender = 'F' AND V6IN129 > 159 AND Walkspeed15ft61>= 6)

WALKSPEEDCOMP61=NULL:

IF gender=NULL or V6IN129=NULL or Walkspeed15ft61= NULL
ELSE WALKSPEEDCOMP61=0

Source variable(s): gender, V6IN129, Walkspeed15ft61

11.36 GRIPSTRENGTHCOMP61 (V6 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: GRIPSTRENGTHCOMP61=1:

Males:

IF gender = 'M' AND BMI61 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR

IF gender = 'M' AND 24 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI61 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI61 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR

Females:

IF gender = 'F' AND BMI61 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI61 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI61 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

GRIPSTRENGTHCOMP61=NULL:

IF gender=NULL or BMI61=NULL or (pfx11b and pfx11c)=NULL

GRIPSTRENGTHCOMP61=0:

Otherwise

Source variable(s): gender, BMI61, pfx11b, pfx11c

11.37 FRAILTY61a (V6 ARIC Physical Function WG Frailty Definition (a))

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 FRAILTY61a=1. If 1 or 2 of the components are present, then FRAILTY61a=2. Of none of the components are present and there is data for each component, then FRAILTY61a=3.

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

Type: Numeric

Algorithm:

1. Weight loss:
If (.<V5V6WTDELTA61<=-5) OR (.<BMI61<18.5)
2. Exhaustion:
If EXHAUST61=1

3. Low Energy:
If (.<SPRT_I61<1.75 AND GENDER='F') OR (.<SPRT_I61<2.00 AND GENDER='M')

4. Walking Speed:
IF (gender = 'M' AND ant3 <=173 AND Walkspeed15ft61>= 7) OR
IF (gender = 'M' AND ant3 > 173 AND Walkspeed15ft61>= 6) OR
IF (gender = 'F' AND ant3 <=159 AND Walkspeed15ft61>= 7) OR
IF (gender = 'F' AND ant3 > 159 AND Walkspeed15ft61>= 6)

5. Grip Strength
IF gender = 'M' AND BMI61 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI61 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI61 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI61 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI61 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI61 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): V5V6WTDELTA61, BMI61, EXHAUST61, SPRT_I61, GENDER, ANT3 WALKSPEED15FT61, PFX11B, PFX11C

11.38 FRAILTY61b (V6 ARIC Physical Function WG Frailty Definition (b))

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 FRAILTY61b=1. If 1 or 2 of the components are present, then FRAILTY61b=2. Of none of the components are present and there is data for each component, then FRAILTY61b=3.

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

Type: Numeric

Algorithm:

1. Weight loss:
If (.<V5V6WTDELTA61<=-10) OR (.<BMI61<18.5)
2. Exhaustion:
If EXHAUST61=1
3. Low Energy:
If (.<SPRT_I61<1.75 AND GENDER='F') OR (.<SPRT_I61<2.00 AND GENDER='M')
4. Walking Speed:
IF (gender = 'M' AND ant3 <=173 AND Walkspeed15ft61>= 7) OR
IF (gender = 'M' AND ant3 > 173 AND Walkspeed15ft61>= 6) OR
IF (gender = 'F' AND ant3 <=159 AND Walkspeed15ft61>= 7) OR
IF (gender = 'F' AND ant3 > 159 AND Walkspeed15ft61>= 6)
5. Grip Strength
IF gender = 'M' AND BMI61 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI61 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI61 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI61 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI61 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI61 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): V5V6WTDELTA61, BMI61, EXHAUST61, SPRT_I61, GENDER, ANT3 WALKSPEED15FT61, PFX11B, PFX11C

11.39 FRAILITY63 (V6 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 frailty63=1. If 1 or 2 of the components are present, then frailty63=2. If none of the components are present

(=0) AND there is data for each component (meaning no component has a missing value), then frailty63=3.

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

Type: Numeric

Algorithm:

1. Exhaustion:
If EXHAUST61=1
2. Low Energy:
If (<SPRT_I61<1.75 AND GENDER='F') OR (<SPRT_I61<2.00 AND GENDER='M')
3. Walking Speed:
IF (gender = 'M' AND ant3 <=173 AND Walkspeed15ft61>= 7) OR
IF (gender = 'M' AND ant3 > 173 AND Walkspeed15ft61>= 6) OR
IF (gender = 'F' AND ant3 <=159 AND Walkspeed15ft61>= 7) OR
IF (gender = 'F' AND ant3 > 159 AND Walkspeed15ft61>= 6)
4. Grip Strength
IF gender = 'M' AND BMI61 <= 24 AND <MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI61 <= 26 AND <MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI61 <= 28 AND <MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI61 > 28 AND <MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI61 <= 23 AND <MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI61 <= 26 AND <MAX(pfx11b, pfx11c)
<= 17.3 OR
IF gender = 'F' AND 26 < BMI61 <= 29 AND <MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI61 > 29 AND <MAX(pfx11b, pfx11c) <= 21

Source variable(s): EXHAUST61, SPRT_I61, GENDER, ANT3 WALKSPEED15FT61, PFX11B, PFX11C

11.40 FRAILITY64 (V6 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 frailty64=1. If 1 or 2 of the components are present, then frailty64=2. If none of the components are present AND there is data for each component, then frailty64=3.

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

Type: Numeric

Algorithm:

1. Unintentional weight loss
If UNINTEND_WTLOSS=1
2. Exhaustion:
If EXHAUST61=1
3. Low Energy:
If (.<SPRT_I61<1.75 AND GENDER='F') OR (.<SPRT_I61<2.00 AND GENDER='M')
4. Walking Speed:
IF (gender = 'M' AND ant3 <=173 AND Walkspeed15ft61>= 7) OR
IF (gender = 'M' AND ant3 > 173 AND Walkspeed15ft61>= 6) OR
IF (gender = 'F' AND ant3 <=159 AND Walkspeed15ft61>= 7) OR
IF (gender = 'F' AND ant3 > 159 AND Walkspeed15ft61>= 6)
5. Grip Strength
IF gender = 'M' AND BMI61 <= 24 AND .<MAX(pfx11b, pfx11c) <= 29
OR
IF gender = 'M' AND 24 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND 26 < BMI61 <= 28 AND .<MAX(pfx11b, pfx11c)
<= 30 OR
IF gender = 'M' AND BMI61 > 28 AND .<MAX(pfx11b, pfx11c) <= 32
OR
IF gender = 'F' AND BMI61 <= 23 AND .<MAX(pfx11b, pfx11c) <= 17
OR
IF gender = 'F' AND 23 < BMI61 <= 26 AND .<MAX(pfx11b, pfx11c)
<= 17.3 OR

IF gender = 'F' AND 26 < BMI61 <= 29 AND .<MAX(pfx11b, pfx11c)
<= 18 OR
IF gender = 'F' AND BMI61 > 29 AND .<MAX(pfx11b, pfx11c) <= 21

Source variable(s): UNINTEND_WTLOSS61, EXHAUST61, SPRT_I61, GENDER, ANT3
WALKSPEED15FT61, PFX11B, PFX11C

11.41 GAITSPEED61 (V6 Gait Speed (m/sec))

Type: Numeric

Algorithm: If WALK4M61>0 then GAITSPEED61=4/WALK4M61

Source variable(s): WALK4M61

12. HEARING RESULTS

12.1 PTARIGHT61 (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 PTARIGHT61=NULL
Else if AUD0c="H" and AUD3="N" then PTARIGHT61=NULL
Else if AUD4a3 and AUD4a1 and AUD4a9 and AUD4a13 are all not missing then
PTARIGHT61=mean(AUD4a3,AUD4a1,AUD4a9,AUD4a13)

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

12.2 PTALEFT61 (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 PTALEFT61=NULL
Else if AUD0c="H" and AUD3="N" then PTALEFT61=NULL
Else if AUD4b3 and AUD4b1 and AUD4b9 and AUD4b13 are all not missing then
PTALEFT61=mean(AUD4b3,AUD4b1,AUD4b9,AUD4b13)

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

12.3 PTABETTER61 (Four Frequency Pure-tone Average (PTA) of the Better Ear (smaller PTA) (Db HL))

Format: continuous integer

Type: Numeric

Algorithm: If PTARIGHT61 not missing or PTALEFT61 not missing then
PTABETTER61=min(PTARIGHT61, PTALEFT61)

Source variable(s): PTARIGHT61, PTALEFT61

12.4 PTABETTERCAT61 (Hearing Loss Category Based on the Four Frequency Pure-tone Average (PTA) of the B)

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 < PTABETTER61 <= 25 then PTABETTER61=1
Else if 25 < PTABETTER61 <= 40 then PTABETTER61=2
Else if 40 < PTABETTER61 <= 70 then PTABETTER61=3
Else if PTABETTER61 > 70 then PTABETTER61=4

Source variable(s): PTABETTER61

13. NEUROCOGNITIVE STUDY

13.1 SELECTED_STAGE_2 (Selected to Stage 2 (1=Yes, 0=No))

Description: ARIC Manual 17 details the selection process for stage 2 participants. The ARIC data management system runs an algorithm that tells if a PPT has been selected to stage 2 following the stage 1 neurocognitive testing. The selection algorithm uses domain and global cognition factor scores calculated within the data management system. A PPT is eligible for stage 2 data collection when they have failed at least 1 cognitive domain (memory, executive function, or language or have missing domain factor scores) and have a decline in global cognition that exceeds 0.055 SD/year OR missing global cognition factor scores. Stage 2 data collection includes the CDI and the NPI from the PPT's informant.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: Selected Stage_2=NULL
ELSE IF V6IN64='Y' OR
(PRORATEDMMSE61 < 21 AND V51 ne 'B') OR
(PRORATEDMMSE61 < 19 AND V51='B') OR
V6NCSCOG61.COGFAILURE='N' OR
V6NCSCOG61.COGDECLINE='N' THEN SELECTED_STAGE_2='N'
ELSE IF V6NCSCOG61.COGFAILURE='Y' AND V6NCSCOG61.COGDECLINE='Y' THEN
SELECTED_STAGE_2='Y'

Source variable(s): Variables from MME and NCS datasets.

13.2 CESD61 (V6 CES-Depression Scale)

Format: Continuous Numeric Variable

Type: numeric

Algorithm: If there are 10 non-missing items among CES1 through CES11 then
CESD61=sum of CES1 through CES11
Otherwise missing.

Source variable(s): CES1 – CES11

13.3 FAQ61 (Functional Activities Questionnaire)

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

Type: Numeric

Algorithm: IF [V6NCSCOG61] SELECTEDSTG2= "Y" then CALCULATE:
FAQ61=CDI25 + CDI26 + CDI31 + 2(CDI35) + CDI36 + CDI37 +
CDI18 + CDI17 + CDI22

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

13.4 PRORATEDMMSE61 (V6 Pro-rated MMSE score [(30 * MME score) / (30 – number skipped due to non-cognitive reasons)])

Description: Numeric variable calculated from the number of correct responses on the Mini-Mental State Exam and the number of items not collected due to reasons other than cognitive ability.

Type: Numeric

Algorithm: If MME31>NULL and (0<=MME32<30) and QIDmme2=0 then
PRORATEDMMSE61=30*MME31/(30 – MME32)

Source variable(s): MME31, MME32

13.5 LOWPROMMSE61 (V6 Low MMSE (<19, Black; <21, non-Black) (1=low, 0=normal))

Description: Indicator variable used in determining ALGDX61 (see table 1 below).
Review ARIC Manual 17.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: LOWPROMMSE61 = NULL when PRORATEDMMSE61 is NULL
=1 when the (PRORATEDMMSE61<19 and RACEGRP=Black) OR
(PRORATEDMMSE61<21 and RACEGRP=Non-black)
=0 otherwise

Source variable(s): PRORATEDMMSE61, RACEGRP

13.6 LOWMEMDOM61 (V6 Memory Domain Factor Z Score is Present and <-1.5)

Description: Indicator variable used in determining ALGDX61 (see table 1 below) and the PPT's neurocognitive status reported in the summary of results. The memory domain factor score is calculated from the delayed word recall, logical memory I, II, and incidental learning neurocognitive tests. The Z score is calculated from a predicted memory factor score. Review ARIC Manual 17.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: The indicator is set to 1 (Yes) when a memory factor score is calculable and the Z score for the PPT <-1.5. The value is 0 when the Z score >=-1.5. Otherwise the value is NULL.

Source variable(s): NCS test scores, predicted memory factor score

13.7 LOWEFDOM61 (V6 Executive Function Domain Factor Z Score is Present and <-1.5)

Description: Indicator variable used in determining ALGDX61 (see table 1 below) and the PPT's neurocognitive status reported in the summary of results. The executive function domain factor score is calculated from the digit substitution and trail making tests (A & B) neurocognitive tests. The Z score is calculated from a predicted executive function factor score. Review ARIC Manual 17.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: The indicator is set to 1 (Yes) when an executive function factor score is calculable and the Z score for the PPT <-1.5. The value is 0 when the Z score >=-1.5. Otherwise the value is NULL.

Source variable(s): NCS test scores, predicted executive function factor score

13.8 LOWLANGDOM61 (V6 Language Domain Factor Z Score is Present and <-1.5)

Description: Indicator variable used in determining ALGDX61 (see table 1 below) and the PPT's neurocognitive status reported in the summary of results. The language domain factor score is calculated from the word fluency, animal naming and Boston naming neurocognitive tests. The Z score is calculated from a predicted language factor score. Review ARIC Manual 17.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: The indicator is set to 1 (Yes) when a language factor score is calculable and the Z score for the PPT <-1.5. The value is 0 when the Z score >=-1.5. Otherwise the value is NULL.

Source variable(s): NCS test scores, predicted language factor score

13.9 SIGCOGDECLINE61 (V6 Global Cognitive Decline from V5 Exceeds 0.055 SD/year)

Description: Indicator variable used in determining ALGDX61 (see table 1 below) and the PPT's neurocognitive status reported in the summary of results. Cognitive decline is calculated as the difference between the V5 global cognition factor score (or an earlier visit for PPTs with no V5 neurocognitive results) and the V6 global cognition factor score. Review ARIC Manual 17.

Format: 0=No
1=Yes
.=Missing

Type: Numeric

Algorithm: SIGCOGDECLINE61=1 if there are 2 global cognition factor scores from 2 exams (visits) for the PPT and the decline from the previous exam to V6 exceeds 0.055 SD/year
SIGCOGDECLINE61=0 if there are 2 global cognition factor scores from 2 exams (visits) for the PPT and the decline from the previous exam to V6 does not exceed 0.055 SD/year
Null otherwise

Source variable(s): V6 NCS test scores, pre-V6 calculated global cognition factor score

13.10 BLOCKAONLY (V6 Participants with Only Block A Complete)

Description: Indicator variable that is set to 1 (Yes) when the PPT completed the Block A neurocognitive testing (delayed word recall, incidental learning, Trails A, Trails B, digit symbol substitution, animal naming, word fluency).

Format: 0=No
1=Yes
. =Missing

Type: Numeric

Algorithm: BLOCKAONLY61=1 if (DWRPRES=1 AND LOGMEMPRES=0 AND INCLRNPRES=1 AND TMTAPRES=1 AND TMTBPRES=1 AND DSSPRES=1 AND DSBPRES=0 AND SEMANTRPRES=1 AND BNT30PRES=0 AND FASPRES=1) then
Else BLOCKAONLY61=0

Source variable(s): NCS test scores

13.11 GCPBLOCKA61 (V6 Proxy Global Cognitive Score for PPTs who Only Completed Block A)

Description: Non-analytic, proxy global cognition factor score, calculated for PPTs who completed the Block A neurocognitive testing (delayed word recall, incidental learning, Trails A, Trails B, digit symbol substitution, animal naming, word fluency).

Type: Numeric

Algorithm: If BLOCKAONLY61=1 then
 $GCPBLOCKA61 = ((NCS3b - 5.1955971) * 0.069) + ((NCS4c - 3.3038058) * 0.066) + ((NCS2b - 37.75) * 0.038) + ((NCS6b - 16.0097072) * 0.042) + ((NCS5e - 32.6247616) * 0.015)$
Else GCPBLOCKA61=missing

Source variable(s): NCS3b, NCS4c, NCS2b, NCS6b, NCS5e

13.12 ALGDX61 (V6 Algorithmic Neurocognitive Classification - Computer algorithm syndromic dx)

Description: Categorical variable for the computer-determined MCI/dementia syndromic diagnosis where 0=normal, 1=probably normal, 2=uncertain, 3=probably mci, 4=probably dementia, 5=mild cognitive

impairment, 6=dementia. The table for these diagnoses is based on Table 1 below, which is Table 4.1 MOP: 17 ARIC Neurocognitive Exam.

Type: Numeric

Algorithm: Table 1 below shows the possible combinations of decline (yes/no/missing), number of failed domains (0, 1, >1, or missing), CDR sum of boxes (0, >0 but ≤3, >3, missing) and FAQ (≤5, >5, missing). Where the criteria above are met, a diagnosis will be assigned by computer, and the table designates these cases as automatic diagnoses. In all other instances, which are expected to occur infrequently, data may be inconsistent, and the computer will provide only a “probable” or “uncertain” diagnosis. In all cases the Classification Committee will assign its own preferred diagnosis, which might differ from the computer diagnosis. The algorithmic diagnosis is available in the reviewer packet.

Every PPT who comes to V6 will be assigned an algorithmic diagnosis according to the table. The rows are mutually exclusive; each PPT will be assigned to only 1 row in the table.

Source variable(s): LOWEFDOM61, LOWLANGDOM61, LOWMEMDOM61, LOWPROMMSE61, SIGCOGDECLINE61, CDS7, FAQ61

Table 1. Computer Generated Algorithmic Diagnoses

Stratum	Decline ¹	Failed domain ²	CDR sum of boxes	FAQ	Algorithm Dx ³	Selected to Stage 2	Requires Review
1	PPT diagnosed with dementia at V5 (DEMDXL1_51=1)				Dem	No	No
2	MMSE score (prorated) less than 21 for white participants <i>or</i> MMSE score (prorated) less than 19 for black participants				Dem	No	No
3	N	ANY	uncollected	uncollected	NL	No	No
4	Y or Y due to missing	0	uncollected	uncollected	NL	No	No
5	Y or Y due to missing	1 failed OR at least 1 missing	0, missing	≤5, missing	MCI	Yes	yes
6	Y or Y due to missing	1 failed OR at least 1 missing	0	>5	Prob MCI	Yes	yes
7	Y or Y due to missing	1 failed OR at least 1 missing	>0 but ≤3	≤5, missing	MCI	Yes	yes
8	Y or Y due to missing	1 failed OR at least 1 missing	>0 but ≤3	>5	Prob MCI	Yes	yes
9	Y or Y due to missing	1 failed OR at least 1 missing	>3	≤5	Prob Dem	Yes	yes
10	Y or Y due to missing	1 failed OR at least 1 missing	>3	>5, missing	Prob Dem	Yes	yes
11	Y or Y due to missing	>1	0, missing	≤5, missing	MCI	Yes	yes
12	Y or Y due to missing	>1	0	>5	Prob MCI	Yes	yes
13	Y or Y due to missing	>1	>0 but ≤3	≤5	MCI	Yes	yes
14	Y or Y due to missing	>1	>0 but ≤3	>5, missing	Prob MCI	Yes	yes
15	Y or Y due to missing	>1	>3	≤5	Prob Dem	Yes	yes
16	Y or Y due to missing	>1	>3	>5, missing	Dem	Yes	yes

- 1 Definite cognitive decline is described in section 2.2.b of manual. Meeting the decline criteria is necessary for selection to stage 2 data collection. The criteria may be met if the annual decrease exceeds 0.055 SD/year OR if decline is missing for the PPT.
- 2 Number of failed domains is described in section 2.2.a of the manual. A domain is failed if any one domain z score <-1.5 OR if the domain score is missing.
- 3 The algorithmic diagnosis will be assigned according to the following hierarchy: 1) PPTs diagnosed with dementia at V5, 2) PPTs with low, race specific prorated MMSE (row 0); then 3) according to the PPTs domain failure, cognitive decline, CDR sum of boxes, and FAQ (rows 3+).

13.13 ALGDXSTRATUM61 (Row from syndromic dx)

Type: Numeric

Algorithm: Categorical variable equal to the value in the 'STRATUM' column in Table 1 above.

13.14 REVIEWERSYND61 (V6 NCS Syndromic Diagnosis by Neurocognitive Classification Committee Review)

See ARIC Manual 17 for information about the classification review process.

Format: character variable with 4 responses (N=Normal, M=mild cognitive impairment, D=dementia, U=undetermined)

Type: Character

Algorithm: if V6NCSCOG61.SELECTEDSTG2="Y" and ALLINITREVIEWSCOMP=1 then do;
REVIEWERSYND61=DCF2_1 from either reviewer when a review requires no adjudication, otherwise REVIEWERSYND61=DCF2_A from the adjudicated record.

Source variable(s): DCF2

13.15 DEMRVTYPE61 (NCS MCI Dementia Review Type)

Description: Identifies the MCI/dementia review type.

Format: D=Two reviewers
A=Adjudicated Review

Type: Character

Algorithm: IF DCF form is present:
If Occurrence=3 AND DCF1='A' then DEMRVTYPE61='A'
Else DEMRVTYPE61='D'

Source variable(s): DCF1

13.16 COGDIAG61 (V6 NCS Cognitive Status Diagnosis)

Description: Categorical variable that combines the information from the reviewer's cognitive diagnosis and the computer-determined MCI/dementia syndromic diagnosis.

Format: N (normal), U (unknown/uncertain), M (mild cognitive impairment), and D (dementia)

Type: Character

Algorithm: COGDIAG61 is the classification committee's diagnosis (REVIEWERSYND61) for PPT's who have been selected to stage 2, otherwise the value assigned is determined from ALGDX61 (N=0,1; M=3,5; D=4,6; U=2).

Source variable(s): REVIEWERSYND61 and ALGDX61

13.17 NEUROCOGSTAT61 (Neurocognitive Status (A=Atypical, T=Typical, U=Unknown))

Description: This variable is a non-analytic variable that describes the PPT's cognitive status. This variable is shown in the PPT summary of results.

Type: Character

Algorithm: If (PRORATEDMMSE61 is NOT NULL and < 19 AND RACEGRP is Black) OR (PRORATEDMMSE61 is NOT NULL and < 21 AND RACEGRP is Non-black) OR the PPT fails 2 or 3 cognitive domains (memory, executive function, language) THEN
NEUROCOGSTAT61='A'

ELSE If global cognition score is NULL AND 2 or 3 cognitive domain factor scores are missing then NEUROCOGSTAT61='U'
ELSE=NEUROCOGSTAT61='T'

Source variable(s): PRORATEDMMSE61, NCS test scores, RACEGRP

14. SF-12 OUTCOMES

The proposed variables are based on the SF-12 questionnaire that was administered as part of Visit 6 using form SFE. All questions in that form will be used to derive the SF12 variables. Those missing a response on any question that is part of the SF12 scale item will be missing that scale, but not other scales for which they have non-missing responses. Those missing individual scales will have missing summary scores for which the missing scale is a component.

The company that holds the license has instructed us to include the statement "a modified version of the SF-12v2 was used" in ALL manuscripts using SF-12 data.

Note that the modifications are very minor, things like underlining certain words or phrases in the questions, and largely irrelevant because the instrument was interviewer-administered.

14.1 SF12PF61 (V6 SF-12 Physical Functioning Scale)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: $SF12PF61 = 100 * (((SFE2a + SFE2b) - 2) / 4);$

Source variable(s): SFE2a, SFE2b

14.2 SF12RP61 (V6 SF-12 Role Physical Scale)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: $SF12RP61 = 100 * (((SFE3a + SFE3b) - 2) / 8);$

Source variable(s): SFE3a, SFE3b

14.3 SF12BP61 (V6 SF-12 Bodily Pain Scale)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Note: SFE5 has inverse scoring scale.

$SF12BP61 = 100 * (((6 - SFE5) - 1) / 4);$

Source variable(s): SFE5

14.4 SF12GH61 (V6 SF-12 General Health Scale)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Note: SFE1 has inverse, renumbered scoring scale.

If SFE1 IN (1,4,5) then SFE1_ren=6-SFE1;
If SFE1 IN (2,3) then SFE1_ren=(6-SFE1)+0.4;
SF12GH61=100*((SFE1_ren-1)/4);

Source variable(s): SFE1

14.5 SF12VT61 (V6 SF-12 Vitality Scale)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Note: SFE6b has inverse scoring scale.

SF12VT61=100*(((6-SFE6b)-1)/4);

Source variable(s): SFE6b

14.6 SF12SF61 (V6 SF-12 Social Functioning Scale)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: SF12SF61=100*((SFE7-1)/4);

Source variable(s): SFE7

14.7 SF12RE61 (V6 SF-12 Role Emotional Scale)

Format: Continuous variable (f6.2)

Type: Numeric
Algorithm: SF12RE61=100*(((SFE4a+SFE4b)-2)/8);
Source variable(s): SFE4a, SFE4b

14.8 SF12MH61 (V6 SF-12 Mental Health Scale)

Format: Continuous variable (f6.2)
Type: Numeric
Algorithm: SF12MH61=100*(((6-SFE6a)+SFE6c)-2)/8);
Source variable(s): SFE6a, SFE6c

14.9 SF12PFZ61 (V6 SF-12 Physical Functioning Scale Z Transformation)

Format: Continuous variable (f6.2)
Type: Numeric
Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.
$$SF12PFZ61 = (SF12PF61 - 81.18122) / 29.10588 ;$$

Source variable(s): SF12PF61

14.10 SF12RPZ61 (V6 SF-12 Role Physical Scale Z Transformation)

Format: Continuous variable (f6.2)
Type: Numeric
Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.
$$SF12RPZ61 = (SF12RP61 - 80.52856) / 27.13526 ;$$

Source variable(s): SF12RP61

14.11 SF12BPZ61 (V6 SF-12 Bodily Pain Scale Z Transformation)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$\text{SF12BPZ61} = (\text{SF12BP61} - 81.74015) / 24.53019$$

Source variable(s): SF12BP61

14.12 SF12GHZ61 (V6 SF-12 General Health Scale Z Transformation)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$\text{SF12GHZ61} = (\text{SF12GH61} - 72.19795) / 23.19041$$

Source variable(s): SF12GH61

14.13 SF12VTZ61 (V6 SF-12 Vitality Scale Z Transformation)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$\text{SF12VTZ61} = (\text{SF12VT61} - 55.59090) / 24.84380$$

Source variable(s): SF12VT61

14.14 SF12SFZ61 (V6 SF-12 Social Functioning Scale Z Transformation)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$SF12SFZ61=(SF12SF61- 83.73973) / 24.75775 ;$$

Source variable(s): SF12SF61

14.15 SF12REZ61 (V6 SF-12 Role Emotional Scale Z Transformation)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$SF12REZ61=(SF12RE61- 86.41051) / 22.35543 ;$$

Source variable(s): SF12RE61

14.16 SF12MHZ61 (V6 SF-12 Mental Health Scale Z Transformation)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$SF12MHZ61=(SF12MH61 - 70.18217) / 20.50597 ;$$

Source variable(s): SF12MH61

14.17 SF12PFT61 (V6 SF-12 Physical Functioning Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$SF12PFT61= 50+(SF12PFZ61*10);$$

Source variable(s): SF12PFZ61

14.18 SF12RPT61 (V6 SF-12 Role Physical Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$\text{SF12RPT61} = 50 + (\text{SF12RPZ61} * 10);$$

Source variable(s): SF12RPZ61

14.19 SF12BPT61 (V6 SF-12 Bodily Pain Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale scores are transformed to Z-scores using US general population means and standard deviations, not age/gender-based.

$$\text{SF12BPT61} = 50 + (\text{SF12BPZ61} * 10);$$

Source variable(s): SF12BPZ61

14.20 SF12GHT61 (V6 SF-12 General Health Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$\text{SF12GHT61} = 50 + (\text{SF12GHZ61} * 10);$$

Source variable(s): SF12GHZ61

14.21 SF12VTT61 (V6 SF-12 Vitality Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$\text{SF12VTT61} = 50 + (\text{SF12VTZ61} * 10);$$

Source variable(s): SF12VTZ61

14.22 SF12SFT61 (V6 SF-12 Social Functioning Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$\text{SF12SFT61} = 50 + (\text{SF12SFZ61} * 10);$$

Source variable(s): SF12SFZ61

14.23 SF12RET61 (V6 SF-12 Role Emotional Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$\text{SF12RET61} = 50 + (\text{SF12REZ61} * 10);$$

Source variable(s): SF12REZ61

14.24 SF12MHT61 (V6 SF-12 Mental Health Scale T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Scale Z-scores are transformed to T-scores.

$$\text{SF12MHT61} = 50 + (\text{SF12MHZ61} * 10);$$

Source variable(s): SF12MHZ61

14.25 SF12AGGPHYS61 (V6 SF-12 Aggregate Physical Health Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Aggregate physical health score created by multiplying scale Z-scores by varimax-rotated factor scoring coefficients and sum the products.

$$\begin{aligned} \text{SF12AGGPHYS61} = & \\ & (\text{SF12PFZ61} * 0.42402) + \\ & (\text{SF12RPZ61} * 0.35119) + \\ & (\text{SF12BPZ61} * 0.31754) + \\ & (\text{SF12GHZ61} * 0.24954) + \\ & (\text{SF12VTZ61} * 0.02877) + \\ & (\text{SF12SFZ61} * -.00753) + \\ & (\text{SF12REZ61} * -.19206) + \\ & (\text{SF12MHZ61} * -.22069); \end{aligned}$$

Source variable(s): SF12PFZ61, SF12RPZ61, SF12BPZ61, SF12GHZ61, SF12VTZ61, SF12SFZ61, SF12REZ61, SF12MHZ61

14.26 SF12AGGMENT61 (V6 SF-12 Aggregate Mental Health Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Aggregate mental health score created by multiplying scale Z-scores by varimax-rotated factor scoring coefficients and sum the products.

$$\begin{aligned} \text{SF12AGGMENT61} = & \\ & (\text{SF12PFZ61} * -.22999) + \\ & (\text{SF12RPZ61} * -.12329) + \\ & (\text{SF12BPZ61} * -.09731) + \\ & (\text{SF12GHZ61} * -.01571) + \\ & (\text{SF12VTZ61} * 0.23534) + \\ & (\text{SF12SFZ61} * 0.26876) + \\ & (\text{SF12REZ61} * 0.43407) + \\ & (\text{SF12MHZ61} * 0.48581); \end{aligned}$$

Source variable(s): SF12PFZ61, SF12RPZ61, SF12BPZ61, SF12GHZ61, SF12VTZ61, SF12SFZ61, SF12REZ61, SF12MHZ61

14.27 SF12AGGPHYST61 (V6 SF-12 Aggregate Physical Health T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Transform Aggregate score to T-score.

$SF12AGGPHYST61 == 50 + (SF12AGGPHYS61 * 10);$

Source variable(s): SF12AGGPHYS61

14.28 SF12AGGMENTT61 (V6 SF-12 Aggregate Mental Health T Score)

Format: Continuous variable (f6.2)

Type: Numeric

Algorithm: Transform Aggregate score to T-score.

$SF12AGGMENTT61 == 50 + (SF12AGGMENT61 * 10);$

Source variable(s): SF12AGGMENT61