

## Coding Manual of Curated Gen 1 dataset

Note:

1. This curated dataset contains information of Gen I participants.
2. There are 5209 unique FHS participants (Gen I) within this dataset, with a total of 2241 variables.
3. Variables are generally grouped based on their origins (i.e., primary FHS dataset)
4. The format of the curated dataset is of wide format, with distinct variable names that allow users to tell the difference for repeated measurements of data of similar nature.
5. For protocol descriptions and annotated forms of the primary datasets, refer to the respective documents of the individual source datasets.
6. Take note of the last verified date for outcome and mortality data:
  - a. Dementia – 12/31/2023
  - b. CVD/Stroke/AF – 12/31/2022
  - c. Cancer – 12/31/2019
  - d. Mortality/Last contact – 12/31/2021
7. Refer to [Appendix](#) for FHS core exam timeline (all cohorts)

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## Demographics

### IDTYPE

**Variable name:** idtype

**Description:** Framingham Heart Study cohort identifier

Code or Value	Description
0	Gen 1

### ID

**Variable name:** id

**Description:** Framingham Heart Study participant identifier within cohort

**IDTYPE and ID must be used together to form a unique study participant identification number or use variable “framid” instead**

Code or Value	Description
0 – 9999	Range of values

**Note:** To preserve confidentiality, the exact range for the ID is not reflected in the coding manual.

### FRAMID

**Variable name:** Framid

**Description:** Framingham ID assigned to each participant

Code or Value	Description
00000 – 99999	Gen 1

**Note:** To preserve confidentiality, the exact range for the ID is not reflected in the coding manual.

### SEX

**Variable name:** sex

**Description:** Gender

Code or Value	Description
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## Demographics

1	Male
2	Female

### RACE\_CODE

**Variable name:** RACE\_CODE

**Description:** RACE and ETHNICITY - Summary code string from combining primary codes given at different exams (Character variable)

### Information extracted from “vr\_raceall\_2008\_a\_0712”

Code or Value	Description
W	White
B	Black
H	Hispanic or Latino
E	Not Hispanic or Latino
A	Asian
P	Native Hawaiian or Pacific Islander
N	American Indian or Alaskan Native
X	Asian Indian or Pacific Islander
R	Prefer not to answer
O	Other
.	Unknown

**Note:** RACE\_CODE is constructed using primary codes W, B, H etc.

Race at different time points (exams) were combined to form RACE\_CODE to indicate all races reported by participant over time.

Example1: RACE\_CODE = 'EW' participant reported 'Not Hispanic or Latino' (H701) and 'White' (H702).

Example2: RACE\_CODE = 'HH' participant reported 'Hispanic or Latino' (RACEATOMNI1) and 'Hispanic or Latino' (H700).

Example3: RACE\_CODE = 'BEB' participant reported 'Black' (RACEATOMNI1), 'Not Hispanic or Latino' (H701) and 'Black' (H703).

Example4: RACE\_CODE = 'ER' participant reported 'Not Hispanic or Latino' (H701) and 'Prefer not to answer' (H707).

**All Gen 1, 2 and 3 participants with missing race code information are assumed as Non-Hispanic White**

### RACE

**Variable name:** Race

**Description:** Race and ethnicity

## Demographics

Code or Value	Description
1	Non-Hispanic White
2	Black
3	Asian/Indian/Pacific Islander
4	Hispanic/Latino
5	Others

### DATE\_CORE1 — DATE\_CORE32

**Variable name:** date\_core1 — date\_core32

**Description:** Exam date of core exam 1 — 32 (MMDDYYYY)

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality.

### AGE\_CORE1 — AGE\_CORE32

**Variable name:** Age\_core1 — Age\_core32

**Description:** Age at exam 1 — 32

### EDU\_CORE1

**Variable name:** edu\_core1

**Description:** Education at core exam 1 – 7

Code or Value	Description
0000	None
0001	Fourth grade or less
0002	Fifth, sixth or seventh grade
0003	Grade school graduate
0004	High school, not graduate
0005	High school graduate
0010	Business college, Nursing school, Music school, Art school
0006	College, not graduate
0007	College graduate
0008	Post graduate
.	Unknown

## Demographics

**Note:** Education information is also collected during NP testing. Refer to variable “education\_B1”, “education\_B2” and “educg”

### EDU\_ALL

**Variable name:** edu\_all

**Description:** Highest education level attained

Code or Value	Description
0	High school did not graduate
1	High school graduate
2	Some college
3	College graduate
.	Unknown

**Note:**

This variable is derived from core exams, neuropsychological exams, and psychosocial questionnaires. Education level was determined by cohort based on available data, with the following priority order.

- Original cohort:
  1. Exam 1
  2. Psychosocial
  3. NP wave 2
  4. NP wave 1
- Offspring cohort
  1. NP wave 2
  2. NP wave 1
  3. Exam 2
  4. Psychosocial
- Omni 1 cohort
  1. NP wave 2
  2. NP wave 1
  3. Exam 3
- Generation 3, NOS, and Omni 2 cohorts
  1. Exam 2
  2. Exam 1
  3. NP wave 1

## Anthropometric Measurements

### HEIGHT\_CORE1 — HEIGHT\_CORE32

**Variable name:** Height\_core1 — Height\_core32

**Description:** Height at exam 1 — 32

**Unit:** Inches, to next lower 1/4

**Note:** There is no information for core exams 2, 3, 6, 7, 8 and 9

### WEIGHT\_CORE1 — WEIGHT\_CORE32

**Variable name:** Weight\_core1 — Weight\_core32

**Description:** Weight at exam 1 — 32

**Unit:** Pounds, to nearest

### BMI\_CORE1 — BMI\_CORE32

**Variable name:** BMI\_core1 — BMI\_core32

**Description:** Body mass index at exam 1 — 32

**Unit:** kg/m<sup>2</sup>

**Note:** There is no information for core exams 2, 3, 6, 7, 8 and 9

### HIP\_CORE19 — HIP\_CORE23

**Variable name:** Hip\_core19 — Hip\_core23

**Description:** Hip girth at Exam 19 — 23

**Unit:** Inches, to next lower 1/4

### WAIST\_CORE4 — WAIST\_CORE23

**Variable name:** Waist\_core4 — Waist\_core23

**Description:** Waist girth at Exam 4 — 23

**Unit:** Inches, to next lower 1/4

**Note:** There is no information for core exams 1 – 3, 6 – 18

## Smoking

### SMOKING\_CORE1 — SMOKING\_CORE32

**Variable name:** Smoking\_core1 — Smoking\_core32

**Description:** Current smoking status at exam 1 — 32

Code or Value	Description
0	Not a current smoker
1	Current Smoker
.	Unknown

**Note:** There is no information for core exams 6 and 16

### SMOKING\_EVER\_CORE2 — SMOKING\_EVER\_CORE32

**Variable name:** Smoking\_ever\_core2 — Smoking\_ever\_core32

**Description:** History of smoking status at exam 2 — 32

Code or Value	Description
0	Non-smoker
1	Current Smoker
2	Ex-smoker
.	Unknown

**Note:** There is no information for core exams 6 and 16

### CPD\_CORE1 — CPD\_CORE32

**Variable name:** CPD\_core1 — CPD\_core32

**Description:** Cigarettes per day at Exam 1 — 32

**Note:** There is no information for core exams 6 and 16



#### SBP\_CORE1 — SBP\_CORE32

**Variable name:** SBP\_core1 — SBP\_core32

**Description:** Systolic blood pressure at exam 1 — 32

**Unit:** mmHg

#### DBP\_CORE1 — DBP\_CORE32

**Variable name:** DBP\_core1 — DBP\_core32

**Description:** Diastolic blood pressure at exam 1 — 32

**Unit:** mmHg

#### VENT\_RT\_CORE1 — VENT\_RT\_CORE32

**Variable name:** Vent\_rt\_core1 — Vent\_rt\_core32

**Description:** Ventricular beat by ECG at Exam 1 — 32

**Note:** There is no information for core exams 2 and 3

#### DLVH\_CORE1 — DLVH\_CORE32

**Variable name:** DLVH\_core1 — DLVH\_core32

**Description:** Definite left ventricular hypertrophy, Exam 1 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

#### HRX\_CORE4 — HRX\_CORE32

**Variable name:** HRX\_core4 — HRX\_core32

**Description:** Treated for hypertension at Exam 4 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

**Note:** There is no information for core exams 1 – 3

**BG\_CORE1 — BG\_CORE28**

**Variable name:** BG\_core1 — BG\_core28

**Description:** Random blood glucose at Exam 1 — 28

**Unit:** mg/dL

**Note:** There is no information for core exams 5, 7, 11, 12, 24 and 25

**DMRX\_CORE1 — DMRX\_CORE32**

**Variable name:** DMRX\_core1 — DMRX\_core32

**Description:** Treated for diabetes at Exam 1 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

**CURR\_DM\_CORE1 — CURR\_DM\_CORE28**

**Variable name:** Curr\_dm\_core1 — Curr\_dm\_core28

**Description:** Current Diabetes status, Exam 1 — 28

Code or Value	Description
0	No
1	Yes
.	Unknown or did not attend Exam 1 — 28

**HX\_DM\_CORE1 — HX\_DM\_CORE28**

**Variable name:** Hx\_dm\_core1 — Hx\_dm\_core28

**Description:** History of diabetes, Exam 1 — 28

Code or Value	Description
0	No
1	Yes
.	Unknown or did not attend Exam 1 — 28

### TC\_CORE1 — TC\_CORE28

**Variable name:** TC\_core1 — TC\_core28

**Description:** Total cholesterol at Exam 1 — 28

**Unit:** mg/dL

**Note:** There is no information for core exams 9, 10, 11, 12, 16, 17, 18, 19 and 21

### HDL\_CORE15 — HDL\_CORE28

**Variable name:** HDL\_core15 — HDL\_core28

**Description:** HDL-Cholesterol at Exam 15 — 28

**Unit:** mg/dL

**Note:** There is no information for core exams 16, 17, 18, 19 and 21

### TRIGLYCERIDES\_CORE7 — TRIGLYCERIDES\_CORE28

**Variable name:** Triglycerides\_core7 — Triglycerides\_core28

**Description:** Triglycerides at Exam 7 — 28

**Unit:** mg/dL

**Note:** There is no information for core exams 9 – 23

### CALC\_LDL\_CORE24 — CALC\_LDL\_CORE28

**Variable name:** Calc\_LDL\_core24 — Calc\_LDL\_core28

**Description:** Calculated LDL-Cholesterol at Exam 24 — 28

**Unit:** mg/dL

### LIPRX\_CORE6— LIPRX\_CORE32

**Variable name:** LIPRX\_core6 — LIPRX\_core32

**Description:** Treated for lipids at Exam 6 — 32

Code or Value	Description
0	No
1	Yes
.	Unknown

## Creatinine

### CREATININE\_CORE14 — CREATININE\_CORE28

**Variable name:** Creatinine\_core14 — Creatinine\_core28

**Description:** Serum Creatinine at Exam 14 — 28

**Units:** mg/dL

**Note:** Creatinine\_core14 and Creatinine\_core15 measured to one decimal place. There is no information for core exams 16, 17, 18, 19, 21, 22 and 23

#### EXAMDATE\_NP1 — EXAMDATE\_NP13

**Variable name:** examdate\_NP1 — exam\_NP13

**Description:** Date of the first — thirteenth NP exam (MMDDYYYY)

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality.

#### AGE\_NP1 — AGE\_NP13

**Variable name:** age\_NP1 — age\_NP13

**Description:** Age of participant at first — thirteenth NP exam

#### BATTERY\_NP1 — BATTERY\_NP13

**Variable name:** battery\_NP1 — battery\_NP13

**Description:** Form of the battery used for first — thirteenth NP exam

Code or Value	Description
1	Short form
2	Long form
.	Unknown

#### MARITAL\_NP1 — MARITAL\_NP13

**Variable name:** marital\_NP1 — marital\_NP13

**Description:** Current marital status, NP exam 1 — 13

Code or Value	Description
1	Single
2	Married
3	Widowed
4	Divorced
5	Separated
6	Other
.	Unknown

#### HANDEDNESS\_NP1 — HANDEDNESS\_NP13

**Variable name:** handedness\_NP1 — handedness\_NP13

**Description:** Subject's handedness, NP Exam 1 — 13 (self-reporting)

Code or Value	Description
1	Right
2	Left
3	Ambidextrous
.	Unknown

#### EMPLOYMENT\_NP1 — EMPLOYMENT\_NP13

**Variable name:** employment\_NP1 — employment\_NP13  
**Description:** Employment status at first — thirteenth NP exam

Code or Value	Description
0	Works full time
1	Works part-time
2	Not working due to disability
3	Retired, no longer works
4	Unemployed (expects to return to work)
5	Never worked for pay outside home
6	Volunteer
7	Other
10	Full-time student
11	Homemaker, expects to return to work
.	Unknown

#### EDUCATION\_B1\_NP1 — EDUCATION\_B1\_NP13

**Variable name:** education\_b1\_NP1 — education\_b1\_NP13  
**Description:** Highest Education Level Completed (Collected from NP battery1), NP Exam 1 — 13

Code or Value	Description
0	None
1	4th grade or less
2	5th, 6th, or 7th grades
3	Grade school graduate; no high school
4	High school, did not graduate
5	High school diploma
6	College, did not graduate
7	College graduate
8	Postgraduate school

10	High school and business college, nursing school, music school, or art school only
.	Unknown

**EDUCATION\_B2\_NP1 — EDUCATION\_B2\_NP13**

**Variable name:** education\_b2\_NP1 — education\_b2\_NP13

**Description:** Highest Education Level Completed (Collected from NP battery2), NP Exam 1 — 13

Code or Value	Description
0	None
1	4th grade or less
2	5th, 6th, or 7th grades
3	Grade school graduate; no high school
4	High school, did not graduate
5	High school diploma
6	GED
7	Some college course-work for credit (no certificate or degree)
8	Junior college – earned certificate or degree (e.g., AD)
9	Business college, nursing school, music school, art school
10	Technical School (post-HS) – earned certificate
11	Four Year College, partial
12	Four Year College, graduate
13	Graduate School, partial (no Masters degree)
14	Graduate School (Masters)
15	Graduate School (Doctorate)
.	Unknown

**EDUCG\_NP1 — EDUCG\_NP13**

**Variable name:** educg\_NP1 — educg\_NP13

**Description:** Education group (derived variable), NP Exam 1 — 13

Code or Value	Description
0	High school did not graduate

## Neuropsychological assessment

1	High school graduate
2	Some college
3	College graduate
.	Unknown

### OCCUP\_B1\_NP1 — OCCUP\_B1\_NP13

**Variable name:** occup\_b1\_NP1 — occup\_b1\_NP13

**Description:** Occupation from NP battery1, NP Exam 1 — 13

Code or Value	Description
1	Major professionals
2	Business managers
3	Administrative personnel
4	Clerical and sales workers
5	Skilled manual employees
6	Semi-skilled employees
7	Unskilled employed
8	Never employed

### OCCUP\_B2\_NP1 — OCCUP\_B2\_NP13

**Variable name:** occup\_b2\_NP1 — occup\_b2\_NP13

**Description:** Occupation from NP battery2, NP Exam 1 — 13

Code or Value	Description
1	Professional, Technical and Related Occupations
2	Executive, Administrative, and Managerial Occupations
3	Sales Occupations
4	Administrative Support Occupations, Including Clerical
5	Precision Production, Craft, and Repair Occupations
6	Machine Operators, Assemblers, and Inspectors
7	Transportation and Material Moving Occupations
8	Handlers, Equipment Cleaners, Helpers, and Laborers



9	Service Occupations, Except Private Household
10	Never employed for pay (e.g., homemaker)
.	Unknown

#### LMI\_NP1 — LMI\_NP13

**Variable name:** lmi\_NP1 — lmi\_NP13

**Description:** Total number correct verbatim and paraphrases from “Logical Memories – Immediate Recall”, NP Exam 1 — 13 (Range: 0 – 23)

#### LMD\_NP1 — LMD\_NP13

**Variable name:** lmd\_NP1 — lmd\_NP13

**Description:** Total number correct verbatim and paraphrases from “Logical Memories – Delayed Recall”, NP Exam 1 — 13 (Range: 0 – 23)

#### LMR\_NP1 — LMR\_NP13

**Variable name:** lmr\_NP1 — lmr\_NP13

**Description:** Logical Memories – Recognition, NP Exam 1 — 13 (Range: 0 – 11)

#### LMI\_JOE\_NP1 — LMI\_JOE\_NP13

**Variable name:** lmi\_joe\_NP1 — lmi\_joe\_NP13

**Description:** Total number of correct verbatim and paraphrases from WMS-III “Logical Memory – Immediate Recall” (only for Joe Garcia), NP Exam 1 — 13 (Range: 0 – 23)

**Note:** This information is not collected for all Gen 1 participants

#### LMD\_JOE\_NP1 — LMD\_JOE\_NP13

**Variable name:** lmd\_joe\_NP1 — lmd\_joe\_NP13

**Description:** Total number of correct verbatim and paraphrases from WMS-III “Logical Memory – Delayed Recall” (only for Joe Garcia), NP Exam 1 — 13 (Range: 0 – 23)

**Note:** This information is not collected for all Gen 1 participants

#### LMR\_JOE\_NP1 — LMR\_JOE\_NP13

**Variable name:** lmr\_joe\_NP1 — lmr\_joe\_NP13

## Neuropsychological assessment

**Description:** Total number of correct verbatim and paraphrases from WMS-III “Logical Memory – Recognition” (only for Joe Garcia), NP Exam 1 — 13 (Range: 0 – 11)

**Note:** This information is not collected for all Gen 1 participants

### LM\_STORY\_NP1 — LM\_STORY\_NP13

**Variable name:** LM\_story\_NP1 — LM\_story\_NP13

**Description:** Which logical memory story was administered? (NP Exam 1 — 13)

Code or Value	Description
1	Anna Thompson ONLY
2	Joe Garcia ONLY
3	Anna Thompson AND Joe Garcia
.	Neither story

### VRI\_NP1 — VRI\_NP13

**Variable name:** vri\_NP1 — vri\_NP13

**Description:** Total points scored from “Visual Reproductions – Immediate Recall”, NP Exam 1 — 13 (Range: 0 – 14)

### VRD\_NP1 — VRD\_NP13

**Variable name:** vrd\_NP1 — vrd\_NP13

**Description:** Total points scored from “Visual Reproductions – Delayed Recall”, NP Exam 1 — 13 (Range: 0 – 14)

### VRR\_NP1 — VRR\_NP13

**Variable name:** vrr\_NP1 — vrr\_NP13

**Description:** Total points scored from “Visual Reproductions – Recognition”, NP Exam 1 — 13 (Range: 0 – 4)

### PASI\_NP1 — PASI\_NP13

**Variable name:** pasi\_NP1 — pasi\_NP13

**Description:** Total Score from “Paired Associate Learning – Immediate Recall”, NP Exam 1 — 13 (Range 0 – 21)

### PASI\_E\_NP1 — PASI\_E1\_NP13

**Variable name:** pasi\_e\_NP1 — pasi\_e\_NP13  
**Description:** Easy Score from “Paired Associate Learning – Immediate Recall”, NP Exam 1 — 13 (Range: 0 – 18)

**PASI\_H\_NP1 — PASI\_H\_NP13**

**Variable name:** pasi\_h\_NP1 — pasi\_h\_NP13  
**Description:** Hard Score from “Paired Associate Learning – Immediate Recall”, NP Exam 1 — 13 (Range: 0 – 12)

**PASD\_NP1 — PASD\_NP13**

**Variable name:** pasd\_NP1 — pasd\_NP13  
**Description:** Total Score from “Paired Associate Learning – Delayed Recall”, NP Exam 1 — 13 (Range: 0 – 10)

**PASD\_E\_NP1 — PASD\_E\_NP13**

**Variable name:** pasd\_e\_NP1 — pasd\_e\_NP13  
**Description:** Easy Score from “Paired Associate Learning – Delayed Recall”, NP Exam 1 — 13 (Range: 0 – 6)

**PASD\_H\_NP1 — PASD\_H\_NP13**

**Variable name:** pasd\_h\_NP1 — pasd\_h\_NP13  
**Description:** Hard Score from “Paired Associate Learning – Delayed Recall”, NP Exam 1 — 13 (Range: 0 – 4)

**PASR\_NP1 — PASR\_NP13**

**Variable name:** pasr\_NP1 — pasr\_NP13  
**Description:** Total Score from “Paired Associate Learning - Recognition”, NP Exam 1 — 13 (Range: 0 – 10)

**DSF\_NP1 — DSF\_NP13**

**Variable name:** dsf\_NP1 — dsf\_NP13  
**Description:** Highest string from “Digits Forward Span”, NP Exam 1 — 13 (Range: 0 – 9)

**DSB\_NP1 — DSB\_NP13**

**Variable name:** dsb\_NP1 — dsb\_NP13

**Description:** Highest string from “Digits Backward Span”, NP Exam 1 — 13 (Range: 0 – 8)

**TRAILS\_A\_NP1 — TRAILS\_A\_NP13**

**Variable name:** trailsA\_NP1 — trailsA\_NP13

**Description:** Time in minutes to finish “Trail A”, NP Exam 1 — 13 – capped at 7 minutes (Range: 0.10 – 7.0)

**TRAILS\_B\_NP1 — TRAILS\_B\_NP13**

**Variable name:** trailsB\_NP1 — trailsB\_NP13

**Description:** Time in minutes to finish “Trail B”, NP Exam 1 — 13 – capped at 10 minutes (Range: 0.32 – 10.0)

**SIM\_NP1 — SIM\_NP13**

**Variable name:** sim\_NP1 — sim\_NP13

**Description:** Total raw score from “Similarities Test”, NP Exam 1 — 13 (Range: 0 – 26)

**HVOT\_NP1 — HVOT\_NP13**

**Variable name:** hvot\_NP1 — hvot\_NP13

**Description:** Total score from “Hooper Visual Organization Test”, NP Exam 1 — 13 (Range: 0 – 30)

**BNT10\_NP1 — BNT10\_NP13**

**Variable name:** bnt10\_NP1 — bnt10\_NP13

**Description:** Correct score without cue from 10 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 10)

**BNT10\_SEMANTIC\_NP1 — BNT10\_SEMANTIC\_NP13**

**Variable name:** bnt10\_semantic\_NP1 — bnt10\_semantic\_NP13

**Description:** Correct score with semantic cue from 10 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 10)

**BNT10\_PHONEMIC\_NP1 — BNT10\_PHONEMIC\_NP13**

**Variable name:** bnt10\_phonemic\_NP1 — bnt10\_phonemic\_NP13

**Description:** Correct score with phonemic cue from 10 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 10)

#### **BNT30\_NP1 — BNT30\_NP13**

**Variable name:** bnt30\_NP1 — bnt30\_NP13  
**Description:** Correct score without cue from 30 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 30)

#### **BNT30\_SEMANTIC\_NP1 — BNT30\_SEMANTIC\_NP13**

**Variable name:** bnt30\_semantic\_NP1 — bnt30\_semantic\_NP13  
**Description:** Correct score with semantic cue from 30 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 30)

#### **BNT30\_PHONEMIC\_NP1 — BNT30\_PHONEMIC\_NP13**

**Variable name:** bnt30\_phonemic\_NP1 — bnt30\_phonemic\_NP13  
**Description:** Correct score with phonemic cue from 30 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 30)

#### **BNT36\_NP1 — BNT36\_NP13**

**Variable name:** bnt36\_NP1 — bnt36\_NP13  
**Description:** Correct score without cue from 36 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 36)

#### **BNT36\_SEMANTIC\_NP1 — BNT36\_SEMANTIC\_NP13**

**Variable name:** bnt36\_semantic\_NP1 — bnt36\_semantic\_NP13  
**Description:** Correct score with semantic cue from 36 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 36)

#### **BNT36\_PHONEMIC\_NP1 — BNT36\_PHONEMIC\_NP13**

**Variable name:** bnt36\_phonemic\_NP1 — bnt36\_phonemic\_NP13  
**Description:** Correct score with phonemic cue from 36 items of “Boston Naming Test”, NP Exam 1 — 13 (Range: 0 – 36)

#### **FINGTAPR\_NP1 — FINGTAPR\_NP13**

**Variable name:** FingTapR\_NP1 — FingTapR\_NP13  
**Description:** Mean of five trials of “Finger-tapping” of right hand, NP Exam 1 — 13

#### **FINGTAPL\_NP1 — FINGTAPL\_NP13**

**Variable name:** FingTapL\_NP1 — FingTapL\_NP13

**Description:** Mean of five trials of “Finger-tapping” of left hand, NP Exam 1 — 13

**WRAT\_NP1 — WRAT\_NP13**

**Variable name:** wrat\_NP1 — wrat\_NP13

**Description:** Raw Score from “Wide Range Achievement Test –Reading”, NP Exam 1 — 13 (Range: 15 – 57)

**FAS\_NP1 — FAS\_NP13**

**Variable name:** fas\_NP1 — fas\_NP13

**Description:** The total words from the Controlled Oral Word Association Test, NP Exam 1 — 13

**FAS\_ANIMAL\_NP1 — FAS\_ANIMAL\_NP13**

**Variable name:** fas\_animal\_NP1 — fas\_animal\_NP13

**Description:** The total words from the animal part of the Category Naming Test, NP Exam 1 — 13

**Note:** this variable only available on “NP battery2”

**BD\_NP1 — BD\_NP13**

**Variable name:** bd\_NP1 — bd\_NP13

**Description:** Total Score from “Block Design”, NP Exam 1 — 13 (Range: 0 – 26)

**WAIS\_NP1 — WAIS\_NP13**

**Variable name:** wais\_NP1 — wais\_NP13

**Description:** Total correct answers from “WAIS test”, NP Exam 1 — 13 (Range: 0 – 29)

**CODING\_CORRECT\_NP1 — CODING\_CORRECT\_NP13**

**Variable name:** coding\_correct\_NP1 — coding\_correct\_NP13

**Description:** Total correct from WAIS-IV Coding, NP Exam 1 — 13

**CODING\_INCORRECT\_NP1 — CODING\_INCORRECT\_NP13**

**Variable name:** coding\_incorrect\_NP1 — coding\_incorrect\_NP13

**Description:** Total incorrect from WAIS-IV Coding, NP Exam 1 — 13

**INCIDENTAL\_PAired\_NP1 — INCIDENTAL\_PAired\_NP13**

**Variable name:** Incidental\_paired\_NP1 — Incidental\_paired\_NP13  
**Description:** Total correct from Paired Incidental Learning (Given the number from Coding, the participant had to draw the appropriate symbol associated with that number; each number is presented twice), NP Exam 1 — 13

**INCIDENTAL\_FREE\_NP1 — INCIDENTAL\_FREE\_NP13**

**Variable name:** Incidental\_free\_NP1 — Incidental\_free\_NP13  
**Description:** Total correct from Free Recall Incidental Learning (The participant was asked to draw all the symbols they remember from the Coding task, without having to identify which number accompanied the symbol), NP Exam 1 — 13

**MATH\_CORRECT\_NP1 — MATH\_CORRECT\_NP13**

**Variable name:** Math\_correct\_NP1 — Math\_correct\_NP13  
**Description:** Total correct responses for Math Fluency, NP Exam 1 — 13

**MATH\_INCORRECT\_ADD\_NP1 — MATH\_INCORRECT\_ADD\_NP13**

**Variable name:** Math\_incorrect\_add\_NP1 — Math\_incorrect\_add\_NP13  
**Description:** Incorrect responses for addition problems, NP Exam 1 — 13

**MATH\_INCORRECT\_SUB\_NP1 — MATH\_INCORRECT\_SUB\_NP13**

**Variable name:** Math\_incorrect\_sub\_NP1 — Math\_incorrect\_sub\_NP13  
**Description:** Incorrect responses for subtraction problems, NP Exam 1 — 13

**MATH\_INCORRECT\_MUL\_NP1 — MATH\_INCORRECT\_MUL\_NP13**

**Variable name:** Math\_incorrect\_mul\_NP1 — Math\_incorrect\_mul\_NP13  
**Description:** Incorrect responses for multiplication problems, NP Exam 1 — 13

**RIGHT\_OPEN\_NP1 — RIGHT\_OPEN\_NP13**

**Variable name:** right\_open\_NP1 — right\_open\_NP13  
**Description:** Seconds from balance test on right leg with eyes open (maximum time is set at 30 seconds), NP Exam 1 — 13

**Note:** This information is not collected for all Gen 1 participants

**LEFT\_OPEN\_NP1 — LEFT\_OPEN\_NP13**

**Variable name:** left\_open\_NP1 — left\_open\_NP13

## Neuropsychological assessment

**Description:** Seconds from balance test on left leg with eyes open (maximum time is set at 30 seconds), NP Exam 1 — 13

**Note:** This information is not collected for all Gen 1 participants

### RIGHT\_CLOSE\_NP1 — RIGHT\_CLOSE\_NP13

**Variable name:** right\_close\_NP1 — right\_close\_NP13

**Description:** Seconds from balance test on right leg with eyes closed (maximum time is set at 30 seconds), NP Exam 1 — 13

**Note:** This information is not collected for all Gen 1 participants

### LEFT\_CLOSE\_NP1 — LEFT\_CLOSE\_NP13

**Variable name:** left\_close\_NP1 — left\_close\_NP13

**Description:** Seconds from balance test on left leg with eyes closed (maximum time is set at 30 seconds), NP Exam 1 — 13

**Note:** This information is not collected for all Gen 1 participants

### MRI352\_NP1 — MRI352\_NP13

**Variable name:** mri352\_NP1 — mri352\_NP13

**Description:** Tester's impression of participant's dementia status (Not verified), NP Exam 1 — 13

Code or Value	Description
0	Not demented
0.25	Not demented/MCI
0.5	Mild Cognitive Impairment
1	Mildly Demented
1.5	Mild – Moderately Demented
2	Moderately Demented
2.5	Moderately – Severely Demented
3	Severely Demented
5	Non-progressive impairment
.	Unknown

### TEST\_LANGUAGE\_NP1 — TEST\_LANGUAGE\_NP13

**Variable name:** test\_language\_NP1 — test\_language\_NP13



## Neuropsychological assessment

**Description:** Language used during NP Exam 1 — 13

Code or Value	Description
1	English
2	Spanish

### NP\_CLOSEST\_EXAM\_DATE1 — NP\_CLOSEST\_EXAM\_DATE13

**Variable name:** np\_closest\_exam\_date1 — np\_closest\_exam\_date13  
**Description:** FHS core exam date that was closest to the first — thirteenth NP test

### NP\_DAYS\_APART1 — NP\_DAYS\_APART13

**Variable name:** np\_days\_apart1 — np\_days\_13  
**Description:** The number of days between the FHS core exam date that was closest to the first — thirteenth NP test and the first — thirteenth NP test date.

**Note:** A negative value means that the FHS core exam that was closest to the NP test occurred prior to the NP test, while a positive value means that the closest FHS core exam occurred after the NP test.

### NP\_EXAM\_CYCLE1 — NP\_EXAM\_CYCLE13

**Variable name:** np\_exam\_cycle1 — np\_exam\_cycle13  
**Description:** FHS core exam cycle that was closest to the first — thirteenth NP test

Code or Value	Description
1	Core Exam 1
2	Core Exam 2
3	Core Exam 3
4	Core Exam 4
5	Core Exam 5
6	Core Exam 6
7	Core Exam 7
8	Core Exam 8
9	Core Exam 9
10	Core Exam 10
11	Core Exam 11
12	Core Exam 12
13	Core Exam 13
14	Core Exam 14
15	Core Exam 15
16	Core Exam 16
17	Core Exam 17
18	Core Exam 18

## Matching NP Dates with Core Exam Dates

19	Core Exam 19
20	Core Exam 20
21	Core Exam 21
22	Core Exam 22
23	Core Exam 23
24	Core Exam 24
25	Core Exam 25
26	Core Exam 26
27	Core Exam 27
28	Core Exam 28
29	Core Exam 29
30	Core Exam 30
31	Core Exam 31
32	Core Exam 32
.	Unknown

#### NORMAL\_DATE

**Variable name:** normal\_date

**Description:** Last date documented to be cognitively intact

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality. In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

#### IMPAIRMENT\_DATE

**Variable name:** impairment\_date

**Description:** Date of cognitive impairment onset

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality. In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

#### MILD\_DATE

**Variable name:** mild\_date

**Description:** Date of diagnosis of mild dementia

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality. In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

#### MODERATE\_DATE

**Variable name:** moderate\_date

**Description:** Date of diagnosis of moderate dementia

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality. In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

#### SEVERE\_DATE

**Variable name:** severe\_date

**Description:** Date of diagnosis of severe dementia

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality. In event that the day and/or month of onset are uncertain, the day is default to 15 and the month is default to 6. The year of onset is always certain for all non-missing values.

#### EDDD

**Variable name:** eddd

**Description:** Earliest documented date of Dementia

**Note:** Date includes month, day and year, however coding manual displays only year to preserve confidentiality. This date variable is an estimated onset date for dementia using the earliest dates of various supporting resources and/or derived from earliest documented date variables of “mild\_date”, “moderate\_date” and “severe\_dates”. In certain situations, the “EDDD” may precede those derived using “mild\_date”, “moderate\_date” and “severe\_dates”.

#### DEMRV046

**Variable name:** demrv046

**Description:** Probable Dementia present

Code or Value	Description
0	No
1	Yes
.	Unknown

**Note:** This variable refers to all-cause dementia.

#### DEMRV103

**Variable name:** demrv103

**Description:** Dementia subtype

Code or Value	Description
0	None
1	Alzheimer’s disease without stroke
2	Alzheimer’s disease with stroke
3	Vascular dementia without Alzheimer’s disease

## Verified Outcomes – Dementia and Related Variables

4	Mixed dementia type (Alzheimer's disease + vascular dementia)
5	Frontotemporal dementia
6	Dementia with Lewy bodies
7	Dementia that does not fit any other Category (progressive)
8	Dementia that does not fit any other category (non-progressive)
9	Cognitive Impairment – No Dementia
10	Dementia – Uncertain
.	Unknown

**Note:** Value “9” refers to Cognitive impairment without Dementia. These subjects are verified to have mild cognitive impairment (MCI). However, it is also possible that participants, who had not yet been screened by the dementia consensus panel, may also suffer from mild cognitive impairment. Hence, if the research outcome of interest is mild cognitive impairment, it is advisable to also consider the psychometric results of the study population as part of the outcome evaluation.

## FIRST\_CHD\_DATE

**Variable name:** first\_chd\_date

**Description:** Date of first Coronary Heart Disease (CHD) Event

**Note:** This variable is derived from the Sequence of Event (SoE) dataset, using the following values in (1, 2, 3, 4, 5, 6, 7, 8, 21, 22, 23, 24) for the variable “EVENT”

### Event Values in SoE Dataset      Description

1	MI recognized, with diagnostic ECG
2	MI recognized, without diagnostic ECG, with enzymes and history
3	MI recognized, without diagnostic ECG, with autopsy evidence, new event (see also code 9)
4	MI unrecognized, silent
5	MI unrecognized, not silent
6	AP, first episode only
7	CI, definite by both history and ECG
8	Questionable MI at exam 1
21	Death, CHD sudden, within 1 hour
22	Death, CHD, 1 - 23 hours, nonsudden
23	Death, CHD, 24-47 hours, non sudden
24	Death, CHD, 48 hours or more, non sudden
.	No record in SoE dataset

### Abbreviations:

MI – Myocardial Infarction

ECG – Electrocardiogram

AP – Angina Pectoris

CI – Coronary Insufficiency

## FIRST\_STROKE\_DATE

**Variable name:** first\_stroke\_date

**Description:** Date of first Stroke (CVA) Event

**Note:** This variable is derived from the Sequence of Event (SoE) dataset, using the following values in (10, 11, 13, 14, 15, 16, 17, 19) for the variable “EVENT”

### Event Values in SoE Dataset      Description

10	Definite CVA at exam 1, but questionable type
11	ABI (Atherothrombotic Infarction of brain)
13	Cerebral embolism
14	Intracerebral hemorrhage
15	Subarachnoid hemorrhage
16	Other CVA
17	CVA, definite CVA, type unknown
19	Questionable CVA at exam 1
.	No record in SoE dataset

Abbreviations:

CVA – Cerebrovascular Accident

ABI – Atherothrombotic Infarction of Brain



## Verified Outcomes – First Atrial Fibrillation (AF) Event

### FIRST\_AF\_DATE

**Variable name:** first\_af\_date

**Description:** Date for first Atrial Fibrillation (AF) Event

**Note:** This variable is derived from the verified Atrial Fibrillation (AF) dataset, using the values in (1, 2, 3) for the variable “RHYTHM”

Rhythm Values in AF Dataset	Description
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1	Atrial fibrillation
2	Atrial flutter
3	Atrial fibrillation / atrial flutter
.	No record in AF dataset

## FIRST\_CANCER\_DATE

**Variable name:** first\_cancer\_date

**Description:** First diagnosis date of tumor or cancer

**Note:** This variable is derived from the verified Cancer dataset, using the variable “D\_DATE”

## TOPO\_CANCER

**Variable name:** topo\_cancer

**Description:** Topography - describes site - corresponds to first three digits of topography code WHO ICD-O

**Note:** This variable is derived from the verified Cancer dataset, using the variable “TOPO”

Rhythm Values in AF Dataset	Description
140	Lip
141	Tongue
142	Major salivary gland
143	Gum
144	Floor of mouth
145	Other and unspecified parts of mouth
146	Oropharynx
147	Nasopharynx
148	Hypopharynx
149	Pharynx and ill-defined sites in lip, oral cavity and pharynx
150	Esophagus
151	Stomach
152	Small intestine
153	Colon
154	Rectum, rectosigmoid junction, anal canal and anus, not otherwise specified
155	Liver and intrahepatic bile ducts
156	Gallbladder and extrahepatic bile ducts
157	Pancreas
158	Retroperitoneum and peritoneum
159	Other and ill-defined sites within digestive organs and peritoneum
160	Nasal cavities, accessory sinuses, middle ear and inner ear
161	Larynx
162	Trachea bronchus, and lung
163	Pleura

## Verified Outcomes – First Cancer and Related Variables

164	Thymus, heart and mediastinum
165	Other and ill-defined sites within respiratory system and intrathoracic organs
169	Hematopoietic and reticuloendothelial systems
170	Bones, joints and articular cartilage
171	Connective, subcutaneous and other soft tissues
173	Skin (excludes skin of labia majora, skin of vulva, skin of penis and skin of scrotum)
174	Female breast (excludes skin of breast)
175	Male breast (excludes skin of breast)
179	Uterus, not otherwise specified
180	Cervix uteri
181	Placenta
182	Corpus uteri or endometrium
183	Ovary, fallopian tube and broad ligament
184	Other and unspecified female genital organs
185	Prostate gland
186	Testis
187	Penis and other male genital organs
188	Urinary bladder
189	Kidney and other urinary organs
190	Eye and lacrimal gland
191	Brain
192	Other and unspecified parts of the nervous system (excludes 4 peripheral nerves, sympathetic and parasympathetic nerves and ganglia)
193	Thyroid gland
194	Other endocrine glands
195	Other ill-defined sites
196	Lymph nodes
199	Unknown primary site
.	No record in Cancer dataset

### LOCATION\_CANCER

**Variable name:** location\_cancer

**Description:** Location - describes subdivision of site - corresponds to fourth digit of topography code WHO ICD-O

**Note:** This variable is derived from the verified Cancer dataset, using the variable “LOCATION”

Code or Value	Description
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## Verified Outcomes – First Cancer and Related Variables

0 – 9	Range of values
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### HIST\_CANCER

**Variable name:** hist\_cancer

**Description:** Histology or morphology - describes cell histopathology - corresponds to four digit morphology code WHO ICD-O

**Note:** This variable is derived from the verified Cancer dataset, using the variable “HIST”

Code or Value	Description
8000 – 9990	Range of values

## Survival Information

### LAST\_CONTACT\_DATE

**Variable name:** Last\_contact\_date

**Description:** Date of last contact (This is the last time the participant was known to be alive)

**Note:** This date is censored to be the last day of 2020 if the last contact date was after the last day of 2020.

### DEATH\_DATE

**Variable name:** Death\_date

**Description:** Date of death

**PREVALENT\_CHD\_CORE1 – PREVALENT\_CHD\_CORE32****Variable name:** prevalent\_chd\_core1 – prevalent\_chd\_core32**Description:** History of CHD present at core exam 1 – 32

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

**Note:** This variable is derived using the variable “first\_chd\_date” and the respective FHS core exam date variables “date\_core”.

**PREVALENT\_STROKE\_CORE1 – PREVALENT\_STROKE\_CORE32****Variable name:** prevalent\_stroke\_core1 – prevalent\_stroke\_core32**Description:** History of stroke present at core exam 1 – 32

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

**Note:** This variable is derived using the variable “first\_stroke\_date” and the respective FHS core exam date variables “date\_core”.

**PREVALENT\_AF\_CORE1 – PREVALENT\_AF\_CORE32****Variable name:** prevalent\_af\_core1 – prevalent\_af\_core32**Description:** History of AF present at core exam 1 – 32

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

**Note:** This variable is derived using the variable “first\_af\_date” and the respective FHS core exam date variables “date\_core”.

**PREVALENT\_DEMENTIA\_CORE1 – PREVALENT\_DEMENTIA\_CORE32**

**Variable name:** prevalent\_dementia\_core1 – prevalent\_dementia\_core32

**Description:** History of dementia present at core exam 1 – 32

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

**Note:** This variable is derived using the variable “eddd” and the respective FHS core exam date variables “date\_core”.

**PREVALENT\_CANCER\_CORE1 – PREVALENT\_CANCER\_CORE32**

**Variable name:** prevalent\_cancer\_core1 – prevalent\_cancer\_core32

**Description:** History of cancer present at core exam 1 – 32

Code or Value	Description
0	No
1	Yes
.	Did not attend core exam

**Note:** This variable is derived using the variable “first\_cancer\_date” and the respective FHS core exam date variables “date\_core”.

**PREVALENT\_CHD\_NP1 – PREVALENT\_CHD\_NP13****Variable name:** prevalent\_chd\_np1 – prevalent\_chd\_np13**Description:** History of CHD present at NP test 1 – 13

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

**Note:** This variable is derived using the variable “first\_chd\_date” and the respective NP test date variables “examdate\_np”.

**PREVALENT\_STROKE\_NP1 – PREVALENT\_STROKE\_NP13****Variable name:** prevalent\_stroke\_np1 – prevalent\_stroke\_np13**Description:** History of stroke present at NP test 1 – 13

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

**Note:** This variable is derived using the variable “first\_stroke\_date” and the respective NP test date variables “examdate\_np”.

**PREVALENT\_AF\_NP1 – PREVALENT\_AF\_NP13****Variable name:** prevalent\_af\_np1 – prevalent\_af\_np13**Description:** History of AF present at NP test 1 – 13

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

**Note:** This variable is derived using the variable “first\_af\_date” and the respective NP test date variables “examdate\_np”.



**PREVALENT\_DEMENTIA\_NP1 – PREVALENT\_DEMENTIA\_NP13**

**Variable name:** prevalent\_dementia\_np1 – prevalent\_dementia\_np13

**Description:** History of dementia present at NP test 1 – 13

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

**Note:** This variable is derived using the variable “eddd” and the respective NP test date variables “examdate\_np”.

**PREVALENT\_CANCER\_NP1 – PREVALENT\_CANCER\_NP13**

**Variable name:** prevalent\_cancer\_np1 – prevalent\_cancer\_np13

**Description:** History of cancer present at NP test 1 – 13

Code or Value	Description
0	No
1	Yes
.	Did not attend NP test

**Note:** This variable is derived using the variable “first\_cancer\_date” and the respective NP test date variables “examdate\_np”.

**FHS CVD risk scores are only available from core exam 15, 20, 22 – 28**

**Refer to publication:** D'Agostino Sr, R. B., Vasan, R. S., Pencina, M. J., Wolf, P. A., Cobain, M., Massaro, J. M., & Kannel, W. B. (2008). General cardiovascular risk profile for use in primary care: the Framingham Heart Study. *Circulation*, 117(6), 743-753.

**AGE\_FHSCVD\_CORE15 – AGE\_FHSCVD\_CORE28**

**Variable name:** age\_fhscvd\_core15 – age\_fhscvd\_core28

**Description:** Age component for FHS CVD risk score at exam 15 – 28

Code or Value	Description
0 – 15	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

**HDL\_FHSCVD\_CORE15 – HDL\_FHSCVD\_CORE28**

**Variable name:** hdl\_fhscvd\_core15 – hdl\_fhscvd\_core28

**Description:** HDL component for FHS CVD risk score at exam 15 – 28

Code or Value	Description
-2 – 2	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

**TC\_FHSCVD\_CORE15 – TC\_FHSCVD\_CORE28**

**Variable name:** tc\_fhscvd\_core15 – tc\_fhscvd\_core28

**Description:** TC (Total Cholesterol) component for FHS CVD risk score at exam 15 – 28

Code or Value	Description
0 – 5	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

**SMOKING\_FHSCVD\_CORE15 – SMOKING\_FHSCVD\_CORE28**

**Variable name:** smoking\_fhscvd\_core15 – smoking\_fhscvd\_core28  
**Description:** Current smoker component for FHS CVD risk score at exam 15 – 28

Code or Value	Description
0	No
3	Yes (Female)
4	Yes (Male)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

**DM\_FHSCVD\_CORE15 – DM\_FHSCVD\_CORE28**

**Variable name:** dm\_fhscvd\_core15 – dm\_fhscvd\_core28  
**Description:** History of diabetes component for FHS CVD risk score at exam 15 – 28

Code or Value	Description
0	No
3	Yes (Male)
4	Yes (Female)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28. Refer to publication for more information

**SBP\_FHSCVD\_CORE15 – SBP\_FHSCVD\_CORE28**

**Variable name:** sbp\_fhscvd\_core15 – sbp\_fhscvd\_core28  
**Description:** Systolic blood pressure component for FHS CVD risk score at exam 15 – 28

Code or Value	Description
-3 – 7	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28. It takes into consideration use of anti-hypertensive medications. Refer to publication for more information

**FHSCVD\_CORE15 –FHSCVD\_CORE28****Variable name:** fhscvd\_core15 – fhscvd\_core28**Description:** FHS CVD risk score at exam 15 – 28

$\text{fhscvd\_core} = \text{age\_fhscvd\_core} + \text{hdl\_fhscvd\_core} + \text{tc\_fhscvd\_core} + \text{smoking\_fhscvd\_core} + \text{dm\_fhscvd\_core} + \text{sbp\_fhscvd\_core}$
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Code or Value	Description
-5 – 36	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 15, 20, 22 – 28, and all components of the FHS CVD risk score **MUST BE** available. Refer to publication for more information

**FSRP are only available from core exam 4, 5, 7-4, 20, 17 – 28****Refer to publications:**

Wolf, P. A., D'Agostino, R. B., Belanger, A. J., & Kannel, W. B. (1991). Probability of stroke: a risk profile from the Framingham Study. *Stroke*, 22(3), 312-318.

Dufouil, C., Beiser, A., McLure, L. A., Wolf, P. A., Tzourio, C., Howard, V. J., ... & Seshadri, S. (2017). Revised Framingham stroke risk profile to reflect temporal trends. *Circulation*, 135(12), 1145-149.

**AGE\_FSRP\_CORE4 – AGE\_FSRP\_CORE28**

**Variable name:** age\_fsrp\_core4 – age\_fsrp\_core28

**Description:** Age component for FSRP at exam 4 – 28

Code or Value	Description
0 – 10	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

**SBP\_FSRP\_CORE4 – SBP\_FSRP\_CORE28**

**Variable name:** sbp\_fsrp\_core4 – sbp\_fsrp\_core28

**Description:** Systolic blood pressure component for FSRP at exam 4 – 28

Code or Value	Description
0 – 10	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

**HRX\_FSRP\_CORE4 – HRX\_FSRP\_CORE28**

**Variable name:** hrx\_fsrp\_core4 – hrx\_fsrp\_core28

**Description:** Anti-hypertensive medications usage component for FSRP at exam 4 – 28

Code or Value	Description
0	No

2	Yes (Male)
0 – 6	Yes (Female)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. For female participants, the score is dependent on the systolic blood pressure measurements. Refer to publication for more information

#### DM\_FSRP\_CORE4 – DM\_FSRP\_CORE28

**Variable name:** dm\_fsrp\_core4 – dm\_fsrp\_core28

**Description:** History of diabetes component for FSRP at exam 4 – 28

Code or Value	Description
0	No
2	Yes (Male)
3	Yes (Female)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

#### SMOKING\_FSRP\_CORE4 – SMOKING\_FSRP\_CORE28

**Variable name:** smoking\_fsrp\_core4 – smoking\_fsrp\_core28

**Description:** Current smoker component for FSRP at exam 4 – 28

Code or Value	Description
0	No
3	Yes
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

**PRECVD\_FSRP\_CORE4 – PRECVD\_FSRP\_CORE28**

**Variable name:** precvd\_fsrp\_core4 – precvd\_fsrp\_core28

**Description:** History of CVD component for FSRP at exam 4 – 28

Code or Value	Description
0	No
2	Yes (Female)
3	Yes (Male)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28.

*The definition of CVD is not the same as that of the variable “first\_chd\_date”.*

*This variable includes the following conditions:*

- *Myocardial Infarction*
- *Angina Pectoris*
- *Coronary Heart Disease*
- *Cardiovascular Disease*
- *Coronary Insufficiency*
- *Intermittent Claudication*
- *Congestive Heart Failure*

*This aligns with the code values of (1, 2, 3, 4, 5, 6, 7, 8, 9, 21, 22, 23, 24, 26, 30, 39, 40, 41, 49) for variable “event” in the verified Sequence of Events (SOE) Cardiovascular Endpoints dataset.*

*Refer to publication for more information*

**PREAF\_FSRP\_CORE4 – PREAF\_FSRP\_CORE28**

**Variable name:** preaf\_fsrp\_core4 – preaf\_fsrp\_core28

**Description:** History of AF component for FSRP at exam 4 – 28

Code or Value	Description
0	No
4	Yes (Male)
6	Yes (Female)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information

**DLVH\_FSRP\_CORE4 – DLVH\_FSRP\_CORE28**

**Variable name:** dlvh\_fsrp\_core4 – dlvh\_fsrp\_core28

**Description:** Ventricular hypertrophy component for FSRP at exam 4 – 28

Code or Value	Description
0	No
4	Yes (Female)
6	Yes (Male)
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28. Refer to publication for more information



**FSRP\_CORE4 – FSRP\_CORE28****Variable name:** fsrp\_core4 – fsrp\_core28**Description:** FSRP at exam 4 – 28

$\text{fsrp\_core} = \text{age\_fsrp\_core} + \text{sbp\_fsrp\_core} + \text{hrx\_fsrp\_core} + \text{dm\_fsrp\_core} + \text{smoking\_fsrp\_core} + \text{precvd\_fsrp\_core} + \text{preaf\_fsrp\_core} + \text{dlvh\_fsrp\_core}$
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Code or Value	Description
0 – 44	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28, and all components of the FSRP **MUST BE** available. Refer to publication for more information

**REVISED\_FSRP\_CORE4 – REVISED\_FSRP\_CORE28****Variable name:** revised\_fsrp\_core4 – revised\_fsrp\_core28**Description:** Revised FSRP at exam 4 – 28

$\text{revised\_fsrp\_core} = \text{age\_fsrp\_core} + \text{sbp\_fsrp\_core} + \text{hrx\_fsrp\_core} + \text{dm\_fsrp\_core} + \text{smoking\_fsrp\_core} + \text{precvd\_fsrp\_core} + \text{preaf\_fsrp\_core}$
---

Code or Value	Description
0 – 44	Range of values
.	Did not attend core exam or out of bounds

**Note:** This derived variable is only available from core exam 4, 5, 7-4, 20, 17 – 28, and all components of the revised FSRP **MUST BE** available. Refer to publication for more information

**MMSE were only available from core exam 17 onwards**

**COGSCR\_CORE17 — COGSCR\_CORE32**

**Variable name:** cogscr\_core17 – cogscr\_core32

**Description:** Total score for MMSE cognitive function test (at exam 17 — 32)

Code or Value	Description
0 – 30	Range of values
.	Unknown

**MAXCOG\_CORE17 — MAXCOG\_CORE32**

**Variable name:** maxcog\_core17 – maxcog\_core32

**Description:** Maximum score based on the questions answered (at exam 17 — 32)

Code or Value	Description
17 – 30	Range of values
.	Unknown

**CES-D were only available from core exam 22 onwards**

**CESD\_CORE22\_1 — CESD\_CORE31\_1**

**Variable name:** CESD\_core22\_1 — CESD\_core31\_1

**Description:** CESD: I was bothered by things that usually don't bother me (at exam 22 — 31)

Code or Value	Description
0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_2 — CESD\_CORE31\_2**

**Variable name:** CESD\_core22\_2 — CESD\_core31\_2

**Description:** CESD: I did not feel like eating: my appetite was poor (at exam 22 — 31)

Code or Value	Description
0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_3 — CESD\_CORE31\_3**

**Variable name:** CESD\_core22\_3 — CESD\_core31\_3

**Description:** CESD: I felt that I could not shake off the blues, even with the help of family and friends (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_4 — CESD\_CORE31\_4**

**Variable name:** CESD\_core22\_4 — CESD\_core31\_4

**Description:** CESD: I felt that I was just as good as other people (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_5 — CESD\_CORE31\_5**

**Variable name:** CESD\_core22\_5 — CESD\_core31\_5

**Description:** CESD: I had trouble keeping my mind on what I was doing (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_6 — CESD\_CORE31\_6**

**Variable name:** CESD\_core22\_6 — CESD\_core31\_6

**Description:** CESD: I felt depressed (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_7 — CESD\_CORE31\_7**

**Variable name:** CESD\_core22\_7 — CESD\_core31\_7

**Description:** CESD: I felt that everything I did was an effort (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days

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3	5 – 7 days
.	Unknown

**CESD\_CORE22\_8 — CESD\_CORE31\_8**

**Variable name:** CESD\_core22\_8 — CESD\_core31\_8

**Description:** CESD: I felt hopeful about the future (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_9 — CESD\_CORE31\_9**

**Variable name:** CESD\_core22\_9 — CESD\_core31\_9

**Description:** CESD: I thought my life had been a failure (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_10 — CESD\_CORE31\_10**

**Variable name:** CESD\_core22\_10 — CESD\_core31\_10

**Description:** CESD: I felt fearful (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_11 — CESD\_CORE31\_11**

**Variable name:** CESD\_core22\_11 — CESD\_core31\_11

**Description:** CESD: My sleep was restless (at exam 22 — 31)

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0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

### CESD\_CORE22\_12 — CESD\_CORE31\_12

**Variable name:** CESD\_core22\_12 — CESD\_core31\_12

**Description:** CESD: I was happy (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

### CESD\_CORE22\_13 — CESD\_CORE31\_13

**Variable name:** CESD\_core22\_13 — CESD\_core31\_13

**Description:** CESD: I talked less than usual (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

### CESD\_CORE22\_14 — CESD\_CORE31\_14

**Variable name:** CESD\_core22\_14 — CESD\_core31\_14

**Description:** CESD: I felt lonely (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

### CESD\_CORE22\_15 — CESD\_CORE31\_15

**Variable name:** CESD\_core22\_15 — CESD\_core31\_15

**Description:** CESD: People were unfriendly (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_16 — CESD\_CORE31\_16**

**Variable name:** CESD\_core22\_16 — CESD\_core31\_16

**Description:** CESD: I enjoyed life (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_17 — CESD\_CORE31\_17**

**Variable name:** CESD\_core22\_17 — CESD\_core31\_17

**Description:** CESD: I had crying spells (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_18 — CESD\_CORE31\_18**

**Variable name:** CESD\_core22\_18 — CESD\_core31\_18

**Description:** CESD: I felt sad (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_19 — CESD\_CORE31\_19**

**Variable name:** CESD\_core22\_19 — CESD\_core31\_19

**Description:** CESD: I felt that people disliked me (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_CORE22\_20 — CESD\_CORE31\_20**

**Variable name:** CESD\_core22\_20 — CESD\_core31\_20

**Description:** CESD: I could not "get going" (at exam 22 — 31)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**CESD\_TOTAL\_CORE22 — CESD\_TOTAL\_CORE31**

**Variable name:** CESD\_total\_core22 — CESD\_total\_core31

**Description:** CESD total score at exam 22 — 31

**Note:** The total CES-D scores are calculated for participants who answered all 20 questions.



### CESD\_CORE32\_1

**Variable name:** CESD\_core32\_1

**Description:** CESD: I was bothered by things that usually don't bother me (at exam 32)

Code or Value	Description
0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

### CESD\_CORE32\_2

**Variable name:** CESD\_core32\_2

**Description:** CESD: I did not feel like eating: my appetite was poor (at exam 32)

Code or Value	Description
0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

### CESD\_CORE32\_3

**Variable name:** CESD\_core32\_3

**Description:** CESD: I felt that I could not shake off the blues, even with the help of family and friends (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_4**

**Variable name:** CESD\_core32\_4

**Description:** CESD: I felt that I was just as good as other people (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_5**

**Variable name:** CESD\_core32\_5

**Description:** CESD: I had trouble keeping my mind on what I was doing (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_6**

**Variable name:** CESD\_core32\_6

**Description:** CESD: I felt depressed (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_7**

**Variable name:** CESD\_core32\_7

**Description:** CESD: I felt that everything I did was an effort (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_8**

**Variable name:** CESD\_core32\_8

**Description:** CESD: I felt hopeful about the future (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_9**

**Variable name:** CESD\_core32\_9

**Description:** CESD: I thought my life had been a failure (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

**CESD\_CORE32\_10**

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**Variable name:** CESD\_core32\_10

**Description:** CESD: I felt fearful (at exam 32)

0	<1 day
1	1 – 2 days
2	3 – 4 days
3	5 – 7 days
.	Unknown

**Note:** Only the first ten CES-D questions were asked for exam 32.

### NEUROPATH\_AVAIL

**Variable name:** neuropath\_avail

**Description:** Availability of brain autopsy data

Code or Value	Description
0	No
1	Yes

### NPBRAAK\_NEUROPATH

**Variable name:** NPBRAAK\_NEUROPATH

**Description:** Braak stage for neurofibrillary degeneration (B score). Use standard blocks to assign phase.

Code or Value	Description
0	Stage 0: AD-type neurofibrillary degeneration not present (B0)
1	Stage I (B1)
2	Stage II (B2)
3	Stage III (B3)
4	Stage IV (B4)
5	Stage V (B5)
6	Stage VI (B6)
.	Missing

### NIA\_REAGAN\_NEUROPATH

**Variable name:** NIA\_REAGAN\_NEUROPATH

**Description:** Derived NIA-Reagan Criteria

Code or Value	Description
1	High likelihood dementia due to AD
2	Intermediate likelihood dementia due to AD
3	Low likelihood dementia due to AD
4	Criteria not met
.	Missing

#### AD\_NEUROPATH

**Variable name:** AD\_NEUROPATH

**Description:** Neuropathological presence of Alzheimer's disease

Code or Value	Description
0	No
1	Yes
.	Missing

#### RELATAUO\_NEUROPATH

**Variable name:** RELATAUO\_NEUROPATH

**Description:** Primary age-related tauopathy (PART; requires NFTs present with Braak stage <= IV, usually III or lower)

Code or Value	Description
0	Not present
1	Yes (Crary et al., 2014)
.	Missing

#### LBD\_NEUROPATH

**Variable name:** LBD\_NEUROPATH

**Description:** Neuropathological presence of Lewy body disease

Code or Value	Description
0	Not present
1	LBD Brainstem predominant
2	LBD limbic/neocortical
.	Missing

#### MND\_NEUROPATH

**Variable name:** MND\_NEUROPATH

**Description:** Neuropathological presence of ALS/Motor neuron disease

Code or Value	Description
0	Not present
1	Yes, with TDP-43 inclusions in motor neurons
2	Yes, with FUS inclusions in motor neurons
3	Yes, with SOD1 inclusions in motor neurons
4	Yes, with other inclusions
5	Yes, with no specific inclusions
8	Not assessed
.	Missing

# Appendix

Original Cohort (idtype=0)				
Exam #	Exam Date Range	Age Range	Mean Age	Total # of Participants
1	1948-1953	28-74	44	5209
2	1950-1955	31-65	46	4792
3	1952-1956	32-67	48	4416
4	1954-1958	34-69	50	4541
5	1956-1960	37-70	52	4421
6	1958-1963	38-72	54	4259
7	1960-1964	40-74	55	4191
8	1962-1966	42-76	57	4030
9	1964-1968	44-78	59	3833
10	1966-1970	46-80	61	3595
11	1968-1971	49-81	62	2955
12	1971-1974	50-83	64	3261
13	1972-1976	53-85	66	3133
14	1975-1978	55-88	68	2871
15	1977-1979	57-89	69	2632
16	1979-1982	59-91	70	2351
17	1981-1984	61-93	72	2179
18	1983-1985	63-94	74	1825
19	1985-1988	65-96	75	1541
20	1986-1990	67-97	77	1401
21	1988-1992	69-99	79	1319
22	1990-1994	72-101	80	1166
23	1992-1996	73-101	81	1026
24	1995-1998	76-103	83	831
25	1997-1999	78-104	84	703
26	1999-2001	79-103	86	558
27	2002-2003	82-104	87	414
28	2004-2005	84-104	89	303
39	2006-2007	85-102	91	218
30	2008-2010	88-102	92	141
31	2010-2011	90-99	92	91
32	2012-2014	93-106	96	40



Revisions	
November 2021	<p>Original Draft</p> <ul style="list-style-type: none"> <li>• Coding Manual of Curated Gen 1 dataset</li> <li>• Dataset: curated0_09_16_2021</li> </ul> <p>Available in both SAS and csv files</p>
December 2021	<p>Revision of November 2021</p> <ul style="list-style-type: none"> <li>• Description corrections for selected variables</li> <li>• Added missing datapoints for waist circumferences</li> <li>• Dataset has been renamed as "curated0_12_09_2021"</li> </ul> <p>Available in both SAS and csv files</p>
Feb 2023	<p>Revision of Dec 2021 draft</p> <ul style="list-style-type: none"> <li>• Included data up to year 2022</li> <li>• Simplify coding manual format to reduce the length</li> <li>• Renamed all NP test related variables using suffix "_NP" for clearer annotation</li> <li>• Added more clinical outcomes and related variables</li> <li>• Added neuropath section</li> <li>• Removed of selected medications and biomarker data till harmonized variables are created</li> <li>• Typo/grammatical/format corrections</li> <li>• Provided SAS code to include list of requested datasets to generate similar curated dataset format</li> </ul>
March 2023	<p>Revision of Feb 2023 draft</p> <ul style="list-style-type: none"> <li>• Updated neuropath section</li> <li>• Typo/grammatical/format corrections</li> </ul>
April 2023	<p>Revision of March 2023 draft</p> <ul style="list-style-type: none"> <li>• Included prevalence variables</li> <li>• Typo/grammatical/format corrections</li> </ul>
May 2023	<p>Revision of April 2023 draft</p> <ul style="list-style-type: none"> <li>• Included FHS CVD Risk Score FSRP</li> <li>• Updated the following section: <ul style="list-style-type: none"> <li>○ NP summary scores</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Dementia Review</li> <li>○ Sequence of event (CHD, Stroke)</li> <li>○ Atrial Fibrillation</li> <li>○ Survival Information</li> <li>• Typo/grammatical/format corrections</li> </ul>
July 2023	Revision of May 2023 draft <ul style="list-style-type: none"> <li>• Correction of date format and missing EDDD values</li> </ul>
Sept 2023	Revision of July 2023 draft <ul style="list-style-type: none"> <li>• SAS code correction for csv file export</li> </ul>
Feb 2024	Revision of Sept 2023 draft <ul style="list-style-type: none"> <li>• Major update to outcome and mortality data <ul style="list-style-type: none"> <li>○ Sequence of event (CHD, Stroke)</li> <li>○ Atrial Fibrillation</li> <li>○ Survival Information</li> </ul> </li> <li>• Added derived variable for Race</li> <li>• Added derived variable for Education</li> <li>• Added history of smoking derived variable</li> <li>• Typo/grammatical/format corrections</li> </ul>
March 2024	Revision of Feb 2024 draft <ul style="list-style-type: none"> <li>• Format correction to neuropath variables</li> <li>• Update of neuropath variables to include data up to 2023</li> <li>• Typo/grammatical/format corrections of manual</li> </ul>
April 2024	Revision of March 2024 draft <ul style="list-style-type: none"> <li>• Update of dementia review variables to include data up to 2023</li> </ul>