

HEALTH AND RETIREMENT STUDY
2018 Exit
Final, Version 1.0
November 2022

Data Description and Usage

Conditions of Use

By registering for access to HRS Public Release data, the User agrees to all of the following:

- Make no attempts to identify study participants.
- Not to transfer HRS Public Release data to any third party other than staff or students for whom you are directly responsible except as indicated below.
- Not to allow others to use your username and password to access this site.
- To certify the destruction of any downloaded Public Release data file as well as any data files derived from the downloaded file when requested to do so by the Health and Retirement Study.
- To include the following citation in any research reports, papers, or publications based on Public Release data:

In text:

"The HRS (Health and Retirement Study) is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan."

In references:

"Health and Retirement Study, 2020 HRS Early Core public use dataset. Produced and distributed by the University of Michigan with funding from the National Institute on Aging (grant number NIA U01AG009740). Ann Arbor, MI, (year)."

- To include the following citation in any research reports, papers, or publications based on any Public Release data file tagged as "Early" or "Preliminary":

"This analysis uses Early Release data from the Health and Retirement Study, 2020 HRS Early Core, sponsored by the National Institute on Aging (grant number NIA U01AG009740) and conducted by the University of Michigan. These data have not been cleaned and may contain errors that will be corrected in the Final Public Release version of the dataset."

- Please note that although it is necessary to include the above citations to the HRS in any publications, it is not necessary to associate your publications with the HRS grant in [PubMed](#).
- Provide information regarding any research product (dissertation, thesis, journal article, book, book chapter, report, etc.) based on data obtained from the Health and Retirement Study by sending an electronic copy to hrspublications@umich.edu.
- Report immediately to the Health and Retirement Study at hqsquestions@umich.edu any disclosure of study participant identity as well as any discovery of flaws or errors in the data or documentation files.
- Notify the Health and Retirement Study through use of the update function provided at this site or by electronic mail directed to hqsquestions@umich.edu of changes in your electronic mail address, postal address, telephone number, organizational affiliation or organizational status.

Contents

1. OVERVIEW	5
1A. THE SAMPLE INTERVIEWED IN 2018	5
1B. 2018 QUESTIONNAIRE SECTIONS	6
1C. LEVELS OF FILES	7
1c1. Respondent Level Files	7
1c2. Household Member and Child Level File	7
1c3. Helper Level File	7
1c4. Transfer-To-Child Level File	7
1c5. Transfer-From-Child Level File	7
2. FILE NAMING CONVENTIONS	7
3. DATA FILES	8
4. IDENTIFICATION VARIABLES	8
4A. PRIMARY IDENTIFICATION VARIABLES	9
4a1. HHID - Household Identification Number	9
4a2. XQSUBHH - 2018 Sub-Household Identifier	9
4a3. PN - Person Number	9
4a4. OPN - Other Person Number	9
4B. PRIMARY IDENTIFICATION VARIABLES FOR DATASETS AT EACH OF THE FIVE LEVELS	9
4C. SECONDARY IDENTIFICATION VARIABLES	10
5. DISTRIBUTION FILES AND DIRECTORY STRUCTURE	10
5A. DISTRIBUTION FILES	10
5B. DIRECTORY STRUCTURE	10
6. PROGRAM STATEMENTS AND READY TO USE FILES	11
6A. USING THE FILES WITH SAS	11
6B. USING THE FILES WITH SPSS	11
6C. USING THE FILES WITH STATA	11
7. DOCUMENTATION	12
7A. CODEBOOK	12
7a1. Variable Names	12
7B. BOX AND ARROW QUESTIONNAIRE	14
7C. MASTER CODES	14
7D. ONLINE QUESTION CONCORDANCE	14
7E. CROSS-WAVE TRACKER FILE	14
7F. OVERVIEW OF HRS PUBLIC DATA FILES FOR CROSS-SECTIONAL AND LONGITUDINAL ANALYSIS	14
8. ADDITIONAL NOTES	14
8A. UNFOLDING BRACKET VARIABLES AND IMPUTATIONS	14
9. OBTAINING THE DATA	16
9A. REGISTRATION AND DOWNLOADING THE DATA	16
9B. CONDITIONS OF USE	17
9C. PUBLICATIONS BASED ON DATA	17
10. IF YOU NEED TO KNOW MORE	17
10A. HRS INTERNET SITE	17
10B. CONTACT INFORMATION	18
APPENDIX	I

A. MASTER CODES **I**

A1. HEALTH CONDITIONS - CATEGORICAL **I**

A2. STATE AND COUNTRY CODES **VI**

A2a. STATES *vi*

A2b. OTHER U.S. *vii*

A2c. OTHER COUNTRIES *vii*

Data Description and Usage

1. Overview

The 2018 HRS Exit (Final, Version 1.0) data release consists of data obtained as part of the Health and Retirement Study (HRS), a national longitudinal study of the economic, health, marital, and family status, as well as public and private support systems, of older Americans. The National Institute on Aging provided funding (NIA U01AG009740), with supplemental support from the Social Security Administration. The Institute for Social Research (ISR) Survey Research Center (SRC) at the University of Michigan conducted the survey.

The current release of the 2018 Exit (Final, Version 1.0) has 980 respondents and 1,379 variables. An Exit Interview is attempted with a "proxy informant" for panel members who have died. To the greatest extent possible, proxy informants are knowledgeable about the health, family, and financial situation of the deceased (often the proxy is a widow, widower, or some other family member). The content of the 2018 Exit interview is similar to the 2018 Core (or living) interview. As such, the 2018 Exit data are amenable to answering researchers' questions concerning medical care, expenditures, how assets are distributed following death, and family decision-making during the latter part of life.

By receiving the data, which have been freely provided, you agree to use them for research and statistical purposes only, and to make no effort to identify the respondents. In addition, you agree to send us a copy of any publications you produce based on the data. See [Obtaining the Data](#) for additional details.

1a. The Sample Interviewed in 2018

The data collection period for the 2018 interview was April 2018 through June 2019. The HRS sample is comprised of seven sub-samples (HRS, AHEAD, CODA, WAR BABY, FINAL BABY BOOMER, MIDDLE BABY BOOMER, and LATE BABY BOOMER).

The first sub-sample, the HRS sub-sample, consists of people who were born 1931 through 1941 and were household residents of the conterminous U.S. in the spring 1992, and their spouses or partners at the time of the initial interview in 1992 or at the time of any subsequent interview. The HRS sub-sample was interviewed in 1992 and every two years thereafter.

The AHEAD sub-sample consists of people who were born in 1923 or earlier, were household residents of the conterminous U.S. in the spring 1992, and were still household residents at the time of their first interview in 1993 or 1994, and their spouses or partners at the time of the initial interview or at the time of any subsequent interview. The AHEAD sub-sample was interviewed in 1993-94, 1995-96, 1998 and every two years thereafter.

The War Baby (WB) sub-sample consists of people who were born in 1942 through 1947, were household residents of the conterminous U.S. in the spring 1992, who, at that time, did not have a spouse or partner born before 1924 or between 1931 and 1941, and were still household residents at the time of the first interview in 1998, and their spouses or partners at the time of the initial interview or at the time of any subsequent interview. The War Baby sub-sample was interviewed in 1998 and every two years thereafter.

The Children of the Depression (CODA) sub-sample consists of people who were born in 1924 through 1930, were household residents of the conterminous U.S. when

first interviewed in 1998, and who, at that time, did not have a spouse or partner who was born before 1924 or between 1931 and 1947, and their spouses or partners at the time of the initial interview or at the time of any subsequent interview. The Children of the Depression sub-sample was interviewed in 1998 and every two years thereafter.

The Final Baby Boomer (EBB) sub-sample consists of people who were born in 1948 through 1953, were household residents of the U.S. when first interviewed in 2004, and who, at that time, did not have a spouse or partner who was born before 1948, and their spouses or partners at the time of the initial interview or at the time of any subsequent interview. The Final Baby Boomer sub-sample was interviewed in 2004 and every two years thereafter.

The Mid Baby Boomer (MBB) sub-sample consists of people who were born between 1954 and 1959, were household residents of the U.S. when first interviewed in 2010/2011, and who, at that time, did not have a spouse or partner who was born before 1954, along with their spouses or partners at the time of the initial interview or at the time of any subsequent interview. The Middle Baby Boomer sub-sample was interviewed in 2010/2011 and every two years thereafter.

Both the EBB and MBB sub-samples were supplemented in the 2010 wave with a sample of individuals residing in areas with 10% or higher concentrations of Black and/or Hispanic populations in order to boost the size of the minority samples in those cohorts.

The Late Baby Boomer (LBB) sub-sample consists of people who were born between 1960 and 1965, were household residents of the U.S. when first interviewed in 2016, and who, at that time, did not have a spouse or partner who was born before 1959, along with their spouses or partners at the time of the initial interview or at the time of any subsequent interview. The Late Baby Boomer sub-sample was interviewed in 2016 and will be interviewed every two years thereafter.

Original sample members are those selected as described above and their spouses or partners at the time of the initial interview in 1992 (HRS), 1993 (AHEAD), 1998 (CODA or WB), 2004 (EBB), 2010/2011 (MBB) or 2016 (LBB). For more details about the sample, see our [Web site](#).

1b. 2018 Questionnaire Sections

The content of the 2018 Exit data collection instrument is roughly equivalent to the content of the HRS 2016 Exit instrument.

2018 Section	Content
PR	Preload
A	Coverscreen
B	Demographics
C	Physical Health
D	Cognition
E	Family Structure and Transfers
G	Functional Limitations and Helpers
J	Employment
N	Health Services and Insurance
T	Wills and Life Insurance
IO	Interviewer Observations
Y	Time Calculations

1c. Levels of Files

In the 2018 Exit Questionnaire, most questions were asked of all respondents. In addition to the familiar respondent-level files, the 2018 HRS Exit (Final, Version 1.0), contains files at four other levels: household-member-and-child, helper, transfer-to-child, and transfer-from-child.

1c1. Respondent Level Files

Respondent-level files contain questions that were asked of all proxy respondents about the deceased respondent. The files contain one record for each respondent who provided a 2018 Exit interview via proxy.

1c2. Household Member and Child Level File

This file contains characteristics about household members, children, and siblings. The information comes from the X18PR_MC file, and contains one record for each household member, child, or sibling.

1c3. Helper Level File

This file contains information provided by each exit proxy about the deceased respondent's helpers. A helper may be a person or organization that was reported by the proxy as providing help with ADLs or IADLs in Section G of the 2018 Exit questionnaire. The helper file X18G_HP contains one record for each helper.

1c4. Transfer-To-Child Level File

This file contains information provided by the exit proxy about transfers of money to children or grandchildren. The file X18E_TC contains one record for each transfer to a child or grandchild. Transfers to children are discussed in Section E - Family Structure and Transfers.

1c5. Transfer-From-Child Level File

This file contains information provided by the exit proxy about transfers of money from children or grandchildren. The file X18E_FC contains one record for each transfer from a child or grandchild. Transfers from children are discussed in Section E of the 2018 interview.

2. File Naming Conventions

Files are named beginning with "X18" for HRS 2018 Exit, followed by a letter (or two) designating the questionnaire section. A separator, "_", and then one or two letters designating the level will follow the section letter designator.

R for respondent-level,
MC for household-member-and-child-level,
HP for helper-level,
TC for transfer-to-child-level, and
FC for transfer-from-child-level files.

For example, the file X18A_R includes variables from section A (coverscreen) at the respondent level, and file X18E_TC includes variables from section E at the monetary transfer-to-child level.

The following extensions are used for the six different types of files that are distributed.

.DA for data files,

.SAS for SAS program statements,
.SPS for SPSS program statements,
.DO for STATA DO statements,
.DCT for STATA dictionary statements, and
.TXT for codebook files.

One of each of these file types is provided for each of the 16 data files for the 2018 HRS Exit (Final, Version 1.0) data release. For example,

X18A_R.DA contains respondent data from section A,
X18A_R.SAS contains corresponding SAS program statements,
X18A_R.SPS contains corresponding SPSS program statements,
X18A_R.DO contains corresponding STATA DO statements,
X18A_R.DCT contains corresponding STATA dictionary statements, and
X18A_R.TXT contains the ASCII codebook.

3. Data Files

The 2018 HRS Exit (Final, Version 1.0) data are distributed in 16 data files. The files are listed below along with the number of cases (N), number of variables (NV), and the primary identifiers (IDS). The records in the data files are sorted in order by these primary identifiers.

The 2016 HRS Exit data are provided in ASCII format, with fixed-length records. Use associated SAS, SPSS, or STATA program statements to read the data into the analysis package of your choice.

Respondent level files: PRIMARY IDS = HHID PN

X18PR_R	N=980	NV=92
X18A_R	N=980	NV=105
X18B_R	N=980	NV=19
X18C_R	N=980	NV=82
X18D_R	N=980	NV=61
X18E_R	N=980	NV=23
X18G_R	N=980	NV=107
X18J_R	N=980	NV=34
X18N_R	N=980	NV=297
X18T_R	N=980	NV=413
X18IO_R	N=980	NV=46
X18Y_R	N=980	NV=17

Household-Member-and-Child level file: PRIMARY IDS = HHID XQSUBHH OPN

X18PR_MC	N=5,964	NV=20
----------	---------	-------

Transfer-to-child level file: PRIMARY IDS = HHID XQSUBHH OPN

X18E_TC	N=262	NV=17
---------	-------	-------

Transfer-from-child level file: PRIMARY IDS = HHID XQSUBHH OPN

X18E_FC	N=136	NV=19
---------	-------	-------

Helper level file: PRIMARY IDS = HHID PN OPN

X18G_HP	N=2,363	NV=27
---------	---------	-------

4. Identification Variables

Identification variables for HRS 2018 Exit (Final, Version 1.0) are stored in character format.

4a. Primary Identification Variables

Several variables, HHID, XQSUBHH, PN, and OPN are used in various combinations to uniquely identify the five different levels that comprise this data release.

4a1. HHID - Household Identification Number

HHID is stable across waves of data collection, and uniquely identifies the original household and any households derived from that household in subsequent waves of data collection. HHID has six digits.

4a2. XQSUBHH - 2018 Sub-Household Identifier

In combination with HHID, XQSUBHH uniquely identifies a household at the time of the 2018 data collection. Sub-household identifiers can be different at each wave due to dissolution or reconstitution of a household (e.g. divorce, separation, marriage, or death). XQSUBHH has one digit. In the 2018 Exit data, XQSUBHH will be either 3 or 4.

4a3. PN - Person Number

In combination with HHID, PN uniquely identifies a respondent. PNs are unique within an original household (HHID). The PN assigned to a particular respondent does not change across waves. PN has three digits.

4a4. OPN - Other Person Number.

In the 2018 data collection HHID, XQSUBHH, and OPN uniquely identify another person in the household member and child files; HHID, PN, and OPN uniquely identify another person in the helper files. OPN has three digits.

4b. Primary Identification Variables for Datasets at Each of the Five Levels

Two identifiers uniquely identify records in the

- o Respondent level datasets:

- 1) HHID HOUSEHOLD IDENTIFICATION NUMBER
- 2) PN PERSON NUMBER

Three identifiers uniquely identify records in the

- o Helper level datasets:

- 1) HHID HOUSEHOLD IDENTIFICATION NUMBER
- 2) PN PERSON NUMBER
- 3) OPN OTHER PERSON NUMBER

Three identifiers uniquely identify records in the

- o Household-member-and-child level dataset:

- 1) HHID HOUSEHOLD IDENTIFICATION NUMBER
- 2) XQSUBHH 2018 SUB-HOUSEHOLD IDENTIFICATION NUMBER
- 3) OPN OTHER PERSON NUMBER

Three identifiers uniquely identify records in the

- o Transfer-to-child level and
- o Transfer-from-child level datasets:

- 1) HHID HOUSEHOLD IDENTIFICATION NUMBER

- 2) XQSUBHH 2018 SUB-HOUSEHOLD IDENTIFICATION NUMBER
- 3) OPN OTHER PERSON NUMBER

4c. Secondary Identification Variables

In addition to the primary identification variables that uniquely identify records in a dataset, secondary identification variables that allow links to other datasets are provided. The secondary identification variables can be used to link the 2018 Exit data with Core data from previous waves, or to link a deceased respondent with data from their surviving spouse or partner.

Secondary Identification Variables for

- o Respondent level and
- o Helper level datasets:

- 1) PSUBHH 2016 SUB-HOUSEHOLD IDENTIFICATION NUMBER
- 2) XQPN_SP 2018 SPOUSE/PARTNER PERSON NUMBER

Secondary Identification Variables for

- o Household-member-and-child level,
- o Transfer-from-child level and
- o Transfer-to-child level datasets:

- 1) PSUBHH 2016 SUB-HOUSEHOLD IDENTIFICATION NUMBER

5. Distribution Files and Directory Structure

5a. Distribution Files

The files are packaged for download from our Web site as a series of .zip files.

The individual files for separate download are:

Data file

x18da.zip containing ASCII data files.

Program statements and "ready-to-use" files

X18sas.zip containing SAS program statements and ready-to-use file.

X18sps.zip containing SPSS program statements and ready-to-use file.

X18sta.zip containing STATA program statements and ready-to-use file.

Documentation files

X18cb.zip containing the codebook.

H18qn.zip containing the questionnaire.

X18dd.pdf - this document.

5b. Directory Structure

While a particular setup is not required for using the 2018 HRS Final Exit files, if the following directory structure is used, then no changes to the path name in the data descriptor files are necessary. If you use a different structure, change the directory references in the distribution files.

Directory	Contents
c:\x2018\	Files downloaded from HRS Web site
c:\x2018\codebook	Unzipped files from x18cb.zip
c:\x2018\data	Unzipped files from x18da.zip
c:\x2018\qnaire	Unzipped files from h18qn.zip

```
c:\x2018\sas           Unzipped files from x18sas.zip
c:\x2018\spss         Unzipped files from x18sps.zip
c:\x2018\stata        Unzipped files from x18sta.zip
```

Decompress the selected .zip files into the appropriate subdirectories.

6. Program Statements and Ready to Use Files

The data are provided as SAS (.sas7bdat), SPSS (.sav) and Stata (.dta) "ready-to-use" files and in ASCII format. Each ASCII data file comes with associated SPSS, SAS, or STATA program statements to read the data. Files containing SPSS statements are named with a .SPS extension, those with SAS statements with a .SAS extension, and those with STATA statements with .DO and .DCT extensions.

Files are named beginning with the same prefix as the corresponding data file. For example, SAS statements in the file X18A_R.SAS go with the X18A_R.DA data file.

6a. Using the Files with SAS

In order to create a SAS system file for a particular dataset, two file types must be present:

- .SAS program statement files and
- .DA data files.

To create a SAS system file, load the *.SAS file into the SAS Program Editor.

If the *.SAS file is located in "c:\x2018\sas" and the data file is located in "c:\x2018\data", you can run the file as is. A SAS system file (*.SD2 or *.SAS7BDAT) will be saved to the "c:\x2018\sas" directory.

If the files are not located in the specified directories, you will need to edit the *.SAS file to reflect the proper path names prior to running the program.

6b. Using the Files with SPSS

In order to create an SPSS system file for a particular dataset, two file types must be present:

- .SPS program statement files and
- .DA data files.

To create an SPSS system file, open the *.SPS file in SPSS as an SPSS Syntax File.

If the *.SPS file is located in "c:\x2018\spss" and the data file is located in "c:\x2018\data", you can run the file as is. An SPSS system file (*.SAV) will be saved to the "c:\x2018\spss" directory.

If the files are not located in the specified directories, you will need to edit the *.SPS file to reflect the proper path names prior to running the file.

6c. Using the Files with STATA

In order to use STATA with a particular dataset, the following three file types must be present:

- .DCT files,
- .DO files and
- .DA data files.

Files with the suffix .DA contain the raw data for STATA to read. Files with the suffix .DCT are STATA dictionaries used by STATA to describe the data. Files with the suffix .DO are short STATA programs ("do files") which are used to read in the data. Load the .DO file into STATA and then submit it.

If the *.DO and *.DCT files are located in "c:\x2018\stata" and the data file is located in "c:\x2018\data", you can run the .DO file as is.

If the files are not located in these directories, you must edit the *.DO and *.DCT files to reflect the proper path names before running the files.

Note that the variable names provided in the .DCT files are uppercase. If you prefer lower case variable names, you may wish to convert the .DCT files to lower case prior to use. You may do this by reading the .DCT file into a text or word processing program and changing the case. For instance, in Microsoft Word, go to Edit, then Select All, go to Format, Change Case, and select lowercase.

7. Documentation

There are several types of documentation available for use with the 2018 HRS Exit (Final, Version 1.0) data release. These include a codebook, the 2018 box-and-arrow questionnaire, online [question concordance](#) and this data description, which includes a list of master codes.

7a. Codebook

The HRS 2018 Exit Codebook is provided as a series of 16 individual ASCII text files, as well as a single file containing all sections. There is a codebook file corresponding to each data file, and a complete codebook that includes all sections. Each variable has its own codebook entry. The format of the codebook is, for the most part, consistent with all previous releases.

7a1. Variable Names

Variable names begin with two letters, the first of which is "X" to indicate the Exit data the second denotes the wave of data collection (XQ for 2018 Exit). These are then followed by the section letter and numbers after the section letter. For example, XQC030 where XQ=2018 Exit, C=Section C (physical health), and 030 is the variable number. Variables from the preload section contain either "X" or "Z" as section prefix letters. The "X" section prefix indicates a variable that is updated by data collected in later sections of the questionnaire, whereas the "Z" section prefix indicates preloaded data that were not changed by subsequent answers to questions. For example, XQZ007 (PREV WAVE R FIN/FAM TYPE) signifies the Family/Financial Type assigned from the previous wave's interview, whereas XQX007 (RESP FAM/FIN TYPE - UPDATED) indicates the current wave Family/Financial Type, which was updated based on responses in the 2018 interview.

7a1a. Multiple Response and Looped Variables

There are two types of variables with multiple mention indicators. First are simple multiple mentions, and second are multiple mentions within loops.

Simple multiple mention variables take the form: (wave prefix) + (section letter) + (variable number) + (mention number). For example, XQC021M1 through XQC021M7 are 2018 variables from section C with one through six mentions.

Simple loop variables (without a multiple mention) have an underscore (_) in their name and a suffix that designates the loop, e.g., XQN025_1.

Null multiple mention variables and variables from null loops beyond the first mention or first loop are not included in the data. It is generally the case that one null multiple mention and one null loop are retained.

7a1b. Masked Variables

To protect the confidentiality of the information that respondents provide, a number of variables have been masked, or are simply not included in the 2018 Exit (Final, Version 1.0) public dataset. Names, addresses, days of birth, information on geographical relocation, and similar variables are not included in publicly released files. Some of these variables may be made available to analysts as restricted data. See our [Web site](#) for details.

Geographical locations are recoded to a level no more detailed than that of the U.S. Census Region and Division. Data on the highest educational degree earned have been further grouped together to increase cell sizes.

The names of variables that were masked for confidentiality end in the letter "M"; for example, variable XQX026M (1ST ADDRESS STATE - MASKED). In the 2018 Exit Final Release, the following variables are masked:

<u>Variable</u>	<u>Label</u>
XQX026M	1ST ADDRESS STATE - MASKED
XQX030M	2ND ADDRESS STATE - MASKED
XQA126M	R DIED - STATE - MASKED
XQA129M	R DEATH CERTIFICATE - STATE - MASKED
XQA133M1M	CAUSE OF DEATH - MASKED- 1
XQA133M2M	CAUSE OF DEATH - MASKED- 2
XQA068M	REGION FACILITY LOCATED - MASKED
XQA076M	CURRENT RESIDENCE STATE - MASKED
XQA081M	OTHER RESIDENCE STATE - MASKED
XQC108M1M	OTHER MEDICAL CONDITIONS - SP - MASKED - 1
XQC108M2M	OTHER MEDICAL CONDITIONS - SP - MASKED - 2
XQC209M1M	DIAGNOSIS OF MEMORY PROBLEM - MASKED - 1
XQC209M2M	DIAGNOSIS OF MEMORY PROBLEM - MASKED - 2
XQN314M1M	WHY ADMITTED - FINAL - 1- MASKED
XQN314M2M	WHY ADMITTED - FINAL - 2- MASKED
XQT158M	WHICH STATE WILL PROBATED - MASKED

7a1c. Rules - Conditions

The conditions that allow a respondent to get a question or sequence of questions have been included in the codebook above the variable name and label. However, the programming of the instrument reused blocks of programming for similar sequences (e.g., the questions about people in the household and the pension questions). While these questions are similar, sometimes the conditions to get them or the pattern within the sequence itself are not the same. We have eliminated these discrepancies wherever possible but you will find some rules that should not apply to some sequences here and there.

In addition, there can be inconsistencies when a Respondent decides to go back and change an answer that controls flow. We strongly recommend that you also check the Box and Arrow questionnaire whenever you have a question about flow and whether a respondent should be in a particular sequence.

7b. Box and Arrow Questionnaire

The research community has referred to the type of documentation that describes the questions asked in the interview as a "questionnaire". Since the 2018 HRS Exit data were collected using a CAI program, a traditional hard-copy questionnaire was not produced as part of the data collection phase. However, we have provided a version of the traditional box-and-arrow questionnaire to help document the asking sequence of the questions.

7c. Master Codes

A master code file contains detailed codeframes used in several sections of the codebook. The master codes include health conditions, alphabetical list of health conditions, occupation codes, industry codes, and state and country codeframes. The master codes appear in the [Appendix](#) of this document.

7d. Online Question Concordance

This documentation resource lets researchers scan the metadata of publicly released HRS datasets in order to find questions asked in a given wave or waves. It contains one record for each of the questions represented by one or more variables in a specified public file. Concordance records are linked over time only in that they have keywords in common or appear in similar sections in different years. It is located here:

<https://hrs.isr.umich.edu/documentation/question-concordance>

7e. Cross-Wave Tracker File

The HRS tracker file is created to facilitate the use of HRS data within and across waves. The file contains one record for every person who was ever eligible to be interviewed in any wave. Each record contains basic demographic information, interview status, and if, when and how an interview was conducted in each wave. Also included are cross-sectional weights and information on inter-respondent relationships, which are vital to almost all substantive analyses of the HRS data. Please see the [Data Descriptions and Release Notes](#) page for the most up to date Tracker file documentation.

7f. Overview of HRS Public Data Files for Cross-sectional and Longitudinal Analysis

HRS distributes a document that provides a description of structure and content for all HRS public data files and a detailed explanation for handling the longitudinal nature of the survey. It is located here:

<http://hrsonline.isr.umich.edu/sitedocs/dmgt/OverviewofHRSPublicData.pdf>

8. Additional Notes

Found here are miscellaneous additional notes regarding HRS 2018 Exit Data Release (Final, Version 1.0). If we become aware of additional issues, they will be posted on our Web site in the [Data Alerts](#) section.

8a. Unfolding Bracket Variables and Imputations

Typically, a series of unfolding bracket questions follow a lead-in question asking for an amount. If a valid amount was not given, a series of "unfolding" questions were asked. The manner in which the unfolding questions were programmed using Blaise for the 2002 through 2018 surveys is different from the way it was programmed in SurveyCraft for the 1993 through 2000 surveys. This change was transparent to the respondents, since exactly the same questions were asked with

the new software; but it did have an implication for the data that were stored and subsequently released.

Instead of storing the response to each unfolding question as was done on waves prior to 2002, three summary variables were generated for HRS 2002 and beyond, a 'MINIMUM', a 'MAXIMUM', and a 'RESULT' variable. The minimum and maximum values are stored based on the answers to the unfolding questions. If the last answer a respondent gave in an unfolding sequence was either "Don't Know" or "Refused," that information is stored in the 'RESULT' variable. If the Respondent said "more than" to the unfolding question with the highest value, then the maximum value was stored as 99999996. Greater than Maximum Breakpoint.

For most analysts, those three variables (and in particular, the minimum and maximum of the possible range) will be sufficient for analyses. For any analyst who needs the more detailed information, it should be noted that the three variables, combined with the information about the unfolding questions provided in the box-and-arrow and codebook, are sufficient to allow the analyst to reconstruct the sequence of questions asked of any respondent, and the answers to each of those questions in many of the unfolding sequences.

For other sequences, those in which respondents were randomly assigned to one of three "entry" points for the first unfolding question, the analyst will also need to take into account a fourth variable (located in the preload sections) that specifies the entry point for each respondent. The following example shows the preload variable (ZX511) and the unfolding sequence that uses the random entry point from ZX511.

Preload Variable from the data file X18pr_r:

```
=====
XQX511                PREASSIGNED RANDOM VALUE -11
  Section: PR      Level: Respondent      Type: Numeric      Width: 1
Decimals: 0
  Ref: RTab[1].X511_1Random1_3

  PREASSIGNED RANDOM VALUE
```

```
.....
          325          1.  RANDOM ASSIGNMENT 1
          331          2.  RANDOM ASSIGNMENT 2
          324          3.  RANDOM ASSIGNMENT 3
=====
```

Unfolding Series from section E that uses XQX511 to assign respondents an entry point:

```
=====
XQE083                TRANSFER TO CHILD - MIN
  Section: E      Level: To Child      Type: Numeric      Width: 5
Decimals: 0
  Ref: SecE.KidTransMain.TransToKid[1].E083_
```

Did it amount to a total of less than \$____ , more than \$____ , or what?

PROCEDURES: 2Up, 1Up1Down, 2Down
BREAKPOINTS: \$1,000, \$5,000, \$20,000

be sent to you via e-mail. Your username and password are required to download any data files.

By registering all users, we are able to document for our sponsors the size and diversity of our user community, allowing us to continue to collect these important data. Registered users receive user support, information related to errors in the data, future releases, workshops, and publication lists. The information you provide will not be used for any commercial use and will not be redistributed to third parties.

9b. Conditions of Use

By registering, you agree to the Conditions of Use governing access to Health and Retirement public release data. You must agree to

- o not attempt to identify respondents
- o not transfer data to third parties except as specified
- o not share your username and password
- o include specified citations in work based on HRS data
- o provide information to us about publications based on HRS data
- o report apparent errors in the HRS data or documentation files
- o notify us of changes in your contact information

For more information concerning privacy issues and conditions of use, please read [Conditions of Use for Public Data Files](#) and [Privacy and Security Statement](#) at the Public File Download Area of the HRS Web site.

9c. Publications Based on Data

As part of the data registration process, you agree to include specified citations, and to inform HRS of any papers, publications, or presentations based on HRS data. Please send a copy of any publications you produce based on HRS data, with a bibliographical reference, if appropriate, to the address below.

Health and Retirement Study
Attn: Papers and Publications
The Institute for Social Research
P.O. Box 1248
Ann Arbor, MI (USA) 48106-1248

Alternately, you may contact us by e-mail at hqsquestions@umich.edu with "Attn: Papers and Publications" in the subject line.

10. If You Need to Know More

This document is intended to serve as a brief overview, and to provide guidelines to using the 2018 HRS Exit (Final, Version 1.0) data. If you have questions or concerns that are not adequately covered here or on our Web site, or if you have any comments, please contact us. We will do our best to provide answers.

10a. HRS Internet Site

Health and Retirement Study public release data and additional information about the study are available on the Internet. To access the data and other relevant information, point your Web browser to the HRS Web site.

<https://hrs.isr.umich.edu/about>

10b. Contact Information

If you need to contact us, you may do so by one of the methods listed below.

Internet: Help Desk at our Web site

E-mail: hqsquestions@umich.edu

Postal Service:

Health and Retirement Study
The Institute for Social Research
The University of Michigan
P.O. Box 1248
Ann Arbor, MI 48106-1248

FAX: (734) 647-1186

APPENDIX

A. Master Codes

Included in this file are the "Master Codes" for HRS. Other areas of the codebook often refer to these lists, as they are too long to replicate at each variable that uses the codes.

The Master Codes in order of appearance are:

- A1. Health Conditions - Categorical
- A2. State and Country Codes

A1. Health Conditions - Categorical

NOTE: If necessary, use individual "Other" categories if system or type of condition is clear; otherwise, code 997.

Cancers and tumors; skin conditions

- 101. Cancer--any site or type; leukemia; Hodgkin's disease; melanomas; non-Hodgkin's lymphoma; tumors if specified as malignant; lymphoma; metastasis angiosarcoma; carcinoma; myeloma/multiple myeloma; myelodysplastic syndrome
- 102. Tumors, cysts or growths (except 101); polyps; osteomyelitis; pre-cancer; neuroma; benign tumors; mole removal; warts; subdural hygroma
- 103. Skin conditions--any mention except cancer (101) or tumor (102); dermatitis; eczema; rashes; Paget's disease; skin ulcers; bedsores; bullous pemphigoid; hair loss; pemphigus; seborrheic keratosis; rosacea; alopecia; psoriasis; burns (also use code 194 if available)

Musculoskeletal system and connective tissue

- 111. Arthritis; rheumatism; bursitis; ankylosing spondylitis; Reiter's syndrome; rheumatica; osteoarthritis
- 112. Back/neck/spine problems: chronic stiffness, deformity or pain; disc problems; scoliosis; spina bifida; bad back; spinal stenosis; back/neck injuries (also use code 194 if available); back/neck sprain (also use code 194 if available)
- 113. Stiffness, deformity, numbness or chronic pain in foot, leg, arm or hand, shoulder or rotator cuff; bad knee/hip problems; hip/knee replacement; plantar fasciitis; drop foot; leg cramps; tennis elbow; Dupuytren's contracture; sprain of limb (also use code 194 if available)
- 114. Missing legs, feet, arms, hands, or fingers (from amputation or congenital deformity)
- 115. Paralysis--any mention (including from polio)
- 116. Hernias; hiatal hernia; rectocele; cystocele
- 117. Muscular dystrophy; mitochondrial myopathy
- 118. Fibromyalgia; fibromyositis; fibrositis; myofascial pain syndrome
- 119. Other musculoskeletal or connective tissue problems; lupus; osteoporosis; pinched nerve (location not specified); sciatica/sciatic nerve problem; carpal tunnel syndrome; costochondritis; polymyositis; scleroderma; chromosome leak into the muscles; bone spurs (location not specified); cellulites; tendonitis (location not specified); temporomandibular joint syndrome (TMJ); trigeminal neuralgia; CREST syndrome/limited scleroderma; polymyalgia/polymyalgia rheumatica; avascular necrosis/osteonecrosis, neural muscular myositis, bone disease, myalgia, myositis, osteopenia; adhesions (location not specified); neuritis; skull bone injuries (also use

code 194 if available); vascular necrosis; broken or damaged bones (location not specified) from injuries/accidents (also use code 194 if available); pulled muscle (location not specified -also use code 194 if available); strain (location not specified - also use code 194 if available); tendon damage (location not specified - also use code 194 if available); sprain (location not specified - also use code 194 if available); post-polio syndrome (without mention of paralysis); loss of calcium

Heart, circulatory and blood conditions

121. Heart problems: heart attack (coronary) or failure; arteriosclerosis; heart aneurysms; heart deformities/congenital heart deformities; angina; bad heart; congestive heart disease; cardiomyopathy; atrial fibrillation; myocardial infarction (MI); multiple infarction; myocardinitis, endocarditis; myocardial ischemia; heart murmurs; heart valve blockage; heart valve prolapse; heart valve replacement; arterial blockage; hardening of arteries; heart bypass surgery; mitral valve prolapse; myocardial ischemia; rheumatic heart disease
122. High blood pressure / hypertension (HTN); uncontrollable blood pressure; blood pressure problems, not specified high or low
123. Stroke; cerebral hemorrhage or accident; hemotoma (if related to brain); transient ischemic attack (TIA);
124. Blood disorders: blood disease, anemia; aplastic anemia; hypoplastic anemia; hemophilia; polycythemia vera; bad blood; toxemia; cold agglutinin disease; triglycerides or high triglycerides; toxoplasmosis; blood transfusion; sickle cell trait; bone marrow failure; factor VIII/factorVIII deficiency/elevated factor VIII ; thrombocytopenia; hemochromatosis;
129. Other circulatory problems; phlebitis, clots/blood clots, embolisms; varicose veins; hemorrhoids; low blood pressure; giant cell arteritis; hemotoma (if not related to brain or location not specified); gangrene; vascular disease; pulmonary thrombosis; pulmonary embolism; Raynaud's disease; APLS Hughes syndrome; aneurysm (when not in heart or location not specified); elasticity of arteries; calcification of limbs; lymphedema; claudication, pulmonary hypertension; rheumatic fever; occult cerebral vascular malformation; bleeding (location not specified); blockage in lung; Rendu-Osler-Weber disease/syndrome

Respiratory system conditions

131. Allergies; hayfever; sinusitis; sinus problems; sinus headaches; tonsillitis; celiac disease/sprue (gluten intolerance); hives
132. Asthma
133. Bronchitis; pneumonia; acute upper respiratory problems; Legionnaire's disease; fungus in chest; respiratory pulmonary disease
134. Emphysema; chronic obstructive pulmonary disease (COPD); smoking related lung problems
139. Other respiratory/breathing problems; tuberculosis; sarcoidosis; ventilatory insufficiency; pulmonary idiopathic fibrosis; respiratory failure, NFS; asbestos in lungs; black lung; pleurisy

Endocrine, metabolic and nutritional conditions

141. Diabetes; pre-diabetic; high blood sugar
142. Thyroid trouble; goiter; hyperthyroidism; Graves' disease; Hashimoto's disease
143. Cystic fibrosis
144. Nutritional problems; weight problems; eating disorders; high cholesterol; hypercholesterolemia; obesity; iron deficiency; overweight; vitamin deficiency

- 145. Sugar problems, NFS; erratic blood sugar
- 149. Other endocrine/metabolic problems; pancreatitis; pituitary problems; gland problems; Addison's disease; gout, nephrotic syndrome; primary adrenal insufficient; parathyroid problems; endocrinology syndrome; amyloidosis; haemochromatosis; hypoglycemia; low blood sugar; loss of calcium; alpha-1 antitrypsin deficiency; acromegaly; hormone problems; hyperpituitarism; hypoglycemia

Digestive system (stomach, liver, gallbladder, kidney, bladder)

- 151. Stomach and intestinal conditions: acid reflux, reflux disease, heartburn, stomach reflux, GERD, Barrett's esophagus, ulcers (stomach, peptic, duodenal or not further specified); colitis; ulcerative colitis; gastritis; diverticulosis; diverticulitis; appendicitis; Crohn's disease; intestinal adhesions; abdominal adhesions; colostomy; silicates disease; stomach pains, ileostomy, dumping syndrome; gastroenteritis, Irritable Bowel Syndrome; diarrhea; bowel incontinence; appendectomy; enteritis; ileitis; peritonitis; stomach removal
- 152. Liver conditions: cirrhosis; hepatitis; benign hepatic hypertrophy; encephalopathy (caused by liver problems or cause not specified); jaundice
- 153. Kidney conditions: kidney stones; kidney failure (including dialysis); nephritis
- 154. Gallbladder conditions; blockage of bile ducts; gallstones; gallbladder removal
- 155. Bladder conditions (except 156); urinary infections; interstitial cystitis, urosepsis
- 156. Urinary incontinence; urinary loss/leakage; problems with bladder control
- 157. Spleen conditions; enlarged spleen
- 159. Other digestive system problems; internal bleeding; hemorrhage; esophagus torn, ruptured or bleeding; swallowing difficulty; feeding tube

Neurological and sensory conditions

- 161. Blindness or vision problems: glaucoma; cataracts; detached/torn retina; macular degeneration; uveitis; ocular myasthenia gravis; conjunctivitis; eye conditions, NFS
- 162. Deafness; hearing loss or other ear conditions; tinnitus; vestibular disorder; Meniere's disease
- 163. Multiple sclerosis; cerebral palsy; epilepsy; Parkinson's; amyotrophic lateral sclerosis (ALS) or Lou Gehrig's disease); seizures; neuropathy; peripheral neuropathy
- 164. Speech conditions--any mention; congenital speech defects; stuttering; laryngectomy; speech impediment
- 165. Mental retardation; mental impairment; learning disabilities; Down syndrome; dyslexia
- 169. Other neurological/sensory problems; headaches; migraines; dizziness; blackouts; brain damage, NFS (also use code 194 if available); meningitis; arachnoiditis; Bell's palsy; Charcot-Marie-Tooth disease; Guillain-Barre syndrome; medial nerve palsy; myasthenia gravis/myasthenia (non-ocular); myokymia; reflex sympathetic dystrophy (RSD); restless legs syndrome (RLS); Sjogren's syndrome; spasmodic torticollis; balance problems; closed head injury; coma; paralyzed diaphragm; facial neuralgia; hydrocephalus; inclusive body myositis; spinal cerebella ataxia; benign/familial tremors, vertigo; upper motor neuron/motoneuron problems, progressive supranuclear palsy (PSP); thoracic outlet syndrome; dysautonomia; shaky hands; spinal cord damage from injuries/accident (also use code 194 if available)

Reproductive system and prostate conditions

- 171. Pregnancy and childbirth problems; miscarriage; hemorrhaging or complications from birth of child; episiotomy; Rh factor
- 172. Infertility; sterilization; vasectomy; tubal ligation
- 173. Prostate conditions; PSA/high PSA
- 179. Other problems of reproductive system; hysterectomy; ovarian problems; PMS; menopause; dysmenorrhea; endometriosis; painful menstrual periods; female problems; gynecological problems, NFS; removal of reproductive organs (excluding cancer and tumors)

Emotional and psychological conditions

- 181. Alcoholism
- 182. Drug abuse/addiction/dependence
- 183. Other severe psychological conditions: (chronic) depression; schizophrenia; mania; paranoia; autism; psychosis; agoraphobia; bipolar disorder (manic-depression); post-traumatic stress disorder (PTSD)
- 189. Other emotional and psychological problems; mental problems, NFS; nerves; nervous breakdown; stress; stress related problems; night wandering; panic attacks; anxiety; behavioral problems; insomnia; attention deficit disorder (ADD)

Miscellaneous

- 191. Alzheimer's disease; senility, dementia; multi-infarct dementia; memory loss; mixed cognitive disease
- 192. Dental and gum conditions--any mention
- 193. Acute infectious diseases; flu; colds; fever; mumps; Dengue fever; Lyme disease; infection, staph infection; methicillin-resistant staphylococcus aureus (MRSA); Epstein-Barr virus; mononucleosis; influenza; measles; rubella; strep throat; virus, NFS; septic shock; toxic shock; sepsis; shingles; polio (without mention of paralysis)
- 194. Injuries and traumas: broken bones; fractures; pulled muscles; strains; tendon damage; burns, lacerations; concussion; side effects/conditions due to surgery, side effects due to medication; graft-versus host disease LOW PRIORITY--code resulting chronic or ongoing conditions if possible
- 195. Sleep disorders; sleep apnea; narcolepsy; cataplexy
- 196. Immune system disorders; human immunodeficiency virus (HIV) positive; acquired immunodeficiency syndrome (AIDS); AIDS related complex (ARC)

Cause of death

- 601. Suicide
- 602. Murder
- 603. Killed in war/combat
- 604. Motor vehicle accident - incl. as pedestrian
- 605. Industrial/work related accident
- 606. Sporting accident
- 607. Other accidental death; accidental death - NA type of accident
- 608. Still born; died at birth or infancy - NFS

Why Admitted

- 701. No other care arrangements available
- 702. Deteriorating health; health condition not specified
- 703. To recover/rehab; for injury/surgery

Other symptoms

- 595. Old age; everything wore out; bedridden; infirmity; natural causes; failure to thrive in older adults
- 596. Lack of energy/strength; (chronic) fatigue, NFS; don't have get up and go
- 597. Edema; retaining water; retaining fluids; swelling (location not specified)

996. None, no health condition(s) mentioned
997. Other health condition

998. DK (Don't Know); NA (Not Ascertained)
999. RF (Refused)

A2. State and Country Codes

A2a. STATES

- 01. Alaska (AK)
- 02. Alabama (AL)
- 53. American Samoa, Guam
- 03. Arizona (AZ)
- 04. Arkansas (AR)

- 05. California (CA)
- 06. Colorado (CO)
- 07. Connecticut (CT)

- 08. Delaware (DE)
- 51. Dist. of Columbia (DC)

- 09. Florida (FL)

- 10. Georgia (GA)
- 53. Guam (GU)

- 11. Hawaii (HI)

- 12. Idaho (ID)
- 13. Illinois (IL)
- 14. Indiana (IN)
- 15. Iowa (IA)

- 16. Kansas (KS)
- 17. Kentucky (KY)

- 18. Louisiana (LA)

- 19. Maine (ME)
- 20. Maryland (MD)
- 21. Massachusetts (MA)
- 22. Michigan (MI)
- 23. Minnesota (MN)
- 24. Mississippi (MS)
- 25. Missouri (MO)
- 26. Montana (MT)

- 27. Nebraska (NE)
- 28. Nevada (NV)
- 29. New Hampshire (NH)
- 30. New Jersey (NJ)
- 31. New Mexico (NM)
- 32. New York (NY)
- 33. North Carolina (NC)
- 34. North Dakota (ND)

- 35. Ohio (OH)
- 36. Oklahoma (OK)
- 37. Oregon (OR)

- 38. Pennsylvania (PA)

- 52. Puerto Rico (PR)
- 39. Rhode Island (RI)
- 40. South Carolina (SC)
- 41. South Dakota (SD)
- 42. Tennessee (TN)
- 43. Texas (TX)
- 44. Utah (UT)
- 45. Vermont (VT)
- 53. (U.S.) Virgin Islands
- 46. Virginia (VA)
- 47. Washington (WA)
- 51. Washington, D.C. (DC)
- 48. West Virginia (WV)
- 49. Wisconsin (WI)
- 50. Wyoming (WY)

A2b. OTHER U.S.

- 51. District of Columbia; Washington, D.C.
- 52. Puerto Rico
- 53. Guam, American Samoa, U.S. Virgin Islands, Panama Canal Zone
- 59. USA, NA which state

A2c. OTHER COUNTRIES

- 97. Other Country
- 98. DK
- 99. NA