HEALTH AND RETIREMENT STUDY

Child Residence ZIP Codes by Wave
All Cohorts, 2004-2022

Restricted Data

Data Description

Version 10.0, September 2025

To the Restricted Data Investigator: Use of this data product is limited to researcher(s) who have obtained authorization from the Health and Retirement Study and the University of Michigan.

If there are any questions about this data set and its use, refer to the HRS Restricted Data Web Site (https://hrs.isr.umich.edu/data-products/restricted-data) or contact the HRS Help Desk (hrsquestions@umich.edu).

Table of Contents

1. Overview

The Health and Retirement Study (HRS) is a national longitudinal study of the economic, health, marital, and family status, as well as public and private support systems, of older Americans. The HRS is a rich source of longitudinal, cross-sectional data for researchers and policymakers who study aging. Funding for the Health and Retirement Study is provided by the National Institute on Aging at NIH (U01 AG009740), with supplemental support from the Social Security Administration. The study is conducted by the Institute for Social Research (ISR) at the University of Michigan.

2. Obtaining the Data

2a. Access to Restricted Geographic Data

Although most HRS data sets are available to the public without restriction, certain HRS data sets contain sensitive respondent information and are only available under terms of a formal agreement negotiated between the researcher and HRS. Prospective users of HRS restricted data may obtain access through the Michigan Center on the Demography of Aging (MiCDA) Virtual Desktop Infrastructure.

For instructions on how to proceed, visit the HRS Restricted Data Web site. If you have questions, contact the HRS Restricted Data Applications Processing Team (hrsrdaapplication@umich.edu) by email.

Use of this data product is limited to researcher(s) whose application for use of HRS restricted data in the MiCDA secure environment has been approved by the Health and Retirement Study and the University of Michigan.

2b. Publications Based on Restricted Data

Your restricted data agreement requires that you inform HRS of any papers, publications, or presentations based on this restricted data set. You may send a bibliographical reference (including a URL link whenever possible) for each item to hrsrdaapplication@umich.edu with "Attn: Papers and Publications" in the subject line. If possible, you should also include a PDF-formatted copy of the publication. As an alternative, you may transmit publications in paper format by postal mail:

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Health and Retirement Study
Attn: Papers and Publications
The Institute for Social Research, Room 3450
P.O. Box 1248
Ann Arbor, Michigan 48106-1248
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3. Content Overview

In Core interviews since 2004, respondents have been asked to provide location information (City, State, ZIP code) for each of their children living more than 10 miles away. The format of these questions has changed over time:

3a. Question Sequence for 2004 through 2008

Prior to 2010, the respondent was asked to provide a ZIP Code for the child (E145). If the ZIP code was not given, the respondent was asked for city and state (E146/E147/E148). If the ZIP code was given, city and state were obtained from external sources.[1] If the ZIP code was not provided by the respondent, it was assigned from city and state information. Foreign addresses were dealt with separately in E149.

In the 2004 Core interview, the sequence was asked for each living child or child's surviving spouse/partner who was in contact and non-resident and who did not live within 10 miles of R. In the 2006 Core and 2008 Core interviews the same sequence was asked for new children or in situations where a child had moved since the previous interview.

3b. Question Sequence for 2010 through 2022

For 2010 onward, respondents were initially asked for each child's city and state (E146/E147/E148). If "other country" was assigned, country name was collected in E149. If a domestic city and state was provided for the child, the respondent was asked for the ZIP code (E145). The asking criteria were revised to include:

- All new children and children who have moved since the last interview of the Family R
- If the respondent has moved, all children who now live more than 10 miles from the respondent
- All children living more than 10 miles from the respondent for whom residence location information has never been obtained
- All children living more than 10 miles from the respondent whose residence location information was obtained more than four years prior to the current wave.

Note: This file contains information about the ZIP code for the by-wave residence of the respondent's children. It does not reflect the respondent's prior childhood history.

[1] For example, the **Zip-Codes.com Standard ZIP Code** database

3c. Data Processing Procedures

2004-2008. If ZIP code was provided and city/state missing, the ZIP code value was used to extract city/state from online databases. If both ZIP code and city/state were provided by the respondent, city/state values were cross-checked against the city/state values in the ZIP code database, and inconsistencies were resolved on a case-by-case basis. In situations where city and state were provided but ZIP code was missing, the city/state combination was used to determine ZIP. In situations where a city/state combination had multiple ZIP codes, the first one on the list was assigned by the coder. Foreign addresses were processed separately; the city (if present) and country name were checked for accuracy and modified as necessary.

2010-2022. If the respondent provided city, state and ZIP code, the combination was cross-checked to ensure consistency. If the respondent only provided city and state, ZIP code was assigned from the Zip-codes.com database, and in the case of problems, online (e.g., Google) lookups. In situations where a city/state combination had multiple ZIP codes, the first one on the list was assigned by the coder. Foreign addresses were processed separately; the city (if present) and country name were checked for accuracy and modified as necessary. [2]

For all waves, latitude and longitude values for each Zip Code centroid were assigned by SAS PROC GEOCODE.

[2] In pre-August 2018 versions of the 2010-2014 files, the OPN variable contained the child index number (MX054_MC / NX054_MC / OX054_MC) from the Core interview. This was incorrect; therefore the 2010-2014 files were altered to include the correct OPN value. The child index number now appears in variable SEQNUM.

3d. Dataset Construction Summary

This distribution set contains a by-wave file constructed from the original 2004 through 2022 wave-level files. Content of the distribution package created by the match process is summarized in **3f**, below. By-wave record counts are summarized in **3g**. Steps in the build process:

1. Wave-level files keyed on HHID, xSUBHH, and OPN were obtained for 2004 through 2022:

Wave	*Household Identifier*	*Original Sub-Household ID*	*Other Person Number*
2022	*HHID*	*SSUBHH*	*OPN*
2020	*HHID*	*RSUBHH*	*OPN*
2018	*HHID*	*QSUBHH*	*OPN*
2016	*HHID*	*PSUBHH*	*OPN*
2014	*HHID*	*OSUBHH*	*OPN*
2012	*HHID*	*NSUBHH*	*OPN*
2010	*HHID*	*MSUBHH*	*OPN*
2008	*HHID*	*LSUBHH*	*OPN*
2006	*HHID*	*KSUBHH*	*OPN*
2004	*HHID*	*JSUBHH*	*OPN*

2. For each wave-level file:
    a. Sub-household IDs (xSUBHH) for each wave was renamed to SUBHH
    b. A unique identifier was created for each record: HHID + SUBHH + OPN + YEAR
    c. Other variables – City, State, Zipcode, Centroid, Match Status, Coding Procedures – were updated/harmonized.
3. The by-wave records were concatenated and sorted on the new identifier to remove duplicates.
4. Zip Code centroid latitude/longitude values were created using SAS PROC GEOCODE.
5. The resulting file was checked against the current Tracker and the distribution package was created.

3e. Warning to Users

HHID/OPN consistency has not been checked for this file. As a result, child OPNs may not match over time. Users may wish to perform analysis at the wave level, aggregate to the household level, and conduct cross-wave analysis by merging at the household level.

3f. Contents of Distribution Package

Directory	***File***	***Type***
c:\czip\	ChildZip2004_2022.zip	Distribution file
c:\czip\xWave\docs\	ChildZipXwave.txt ChildZipCode2004_2022DD.pdf	Codebook (ASCII text) Data Description
c:\czip\xWave\sas\	Childzipxwave.sas7bdat	Cross-Wave SAS system file
c:\czip\xWave\spss\	Childzipxwave.sav	Cross-Wave SPSS system file
c:\czip\Wave\stata\	Childzipxwave.dta	Cross-Wave Stata system file

3g. By-Wave Record Counts (2004-2022)

2004	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	373	0	0	0	0	0	0	373
Valid Zip	0	7441	13425	0	235	0	0	21101
State Only	0	0	0	1593	0	0	0	1593
DK/NA	0	0	0	0	0	0	1689	1689
Total	373	7441	13425	1593	235	0	1689	24756

2006	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	55	0	0	0	0	0	0	55
Valid Zip	0	2100	3380	0	673	0	0	6153
State Only	0	0	0	562	0	0	0	562
DK/NA	0	0	0	0	0	0	394	394
Total	55	2100	3380	562	673	0	394	7164

2008	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	151	0	0	0	0	0	0	151
Valid Zip	0	1712	2273	0	555	0	0	4540
State Only	0	0	0	420	0	0	0	420
DK/NA	0	0	0	0	0	0	299	299
Total	151	1712	2273	420	555	0	299	5410

2010	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	594	0	0	0	0	0	0	594
Valid Zip	0	5605	13267	0	2262	0	0	21134
State Only	0	0	0	1222	0	0	0	1222
DK/NA	0	0	0	0	0	212	605	817
Total	594	5605	13267	1222	2262	212	605	23767

2012	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	712	0	0	0	0	0	0	712
Valid Zip	0	6144	17141	0	23	0	0	23308
State Only	0	0	0	1258	0	0	0	1258
DK/NA	0	0	0	0	0	205	707	912
Total	712	6144	17141	1258	23	205	707	26190

2014	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	825	0	0	0	0	0	0	825
Valid Zip	0	5390	13216	0	2977	0	0	21583
State Only	0	0	0	1256	0	0	0	1256
DK/NA	0	0	0	0	0	65	494	559
Total	825	5390	13216	1256	2977	65	494	24223

2016	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	881	0	0	0	0	0	0	881
Valid Zip	0	6038	13251	0	1631	0	0	20920
State Only	0	0	0	1462	0	0	0	1462
DK/NA	0	0	0	0	0	732	0	732
Total	881	6038	13251	1462	1631	732	0	23995

2018	Coding Procedures Flag							
ZIP Code Status:	Foreign Country (0)	Zip/City/ State (1)	City/ State (3)	State Only (4)	Other-resolved (5)	Other-Not resolved (6)	Incomplete/ DK/NA (9)	Total
Foreign	838	0	0	0	0	0	0	838
Valid Zip	0	5780	10121	0	2344	0	0	18245
State Only	0	0	0	1304	0	0	0	1304
DK/NA	0	0	0	0	0	615	0	615
Total	838	5780	10121	1304	2344	615	0	21002

2020	*Coding Procedures Flag*							
ZIP Code Status:	***Foreign Country (0)***	***Zip/City/ State (1)***	***City/ State (3)***	***State Only (4)***	***Other-resolved (5)***	***Other-Not resolved (6)***	***Incomplete/ DK/NA (9)***	***Total***
Foreign	783	0	0	0	0	0	0	783
Valid Zip	0	5094	9550	0	2352	0	0	16996
State Only	0	0	0	1037	0	0	0	1037
DK/NA	0	0	0	0	0	810	0	810
Total	783	5094	9550	1037	2352	810	0	19626

2022	*Coding Procedures Flag*							
ZIP Code Status:	***Foreign Country (0)***	***Zip/City/ State (1)***	***City/ State (3)***	***State Only (4)***	***Other-resolved (5)***	***Other-Not resolved (6)***	***Incomplete/ DK/NA (9)***	***Total***
Foreign	682	0	0	0	0	0	0	682
Valid Zip	0	4549	8240	0	1975	0	0	14765
State Only	0	0	0	1117	0	0	0	1117
DK/NA	0	0	0	0	0	510	0	509
Total	682	4549	8239	1117	1978	510	0	17074

4. If You Need to Know More

This document is intended to serve as a brief overview that provides guidelines for using this data product. 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.

4a. HRS Internet Site

Health and Retirement Study public release data and additional information about the study are available on the Internet. To access public data or to find out more about restricted data products and procedures, visit the HRS Web site.

4b. Contact Information

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

Internet: Help Desk at the HRS Web site (https://hrs.isr.umich.edu/help)

E-mail: hrsquestions@umich.edu

Postal Service:

Health and Retirement Study
The Institute for Social Research
426 Thompson Street, 3450 ISR
Ann Arbor, Michigan 48104

Appendix: Using the Child ZIP Code File for Analysis

1. Distribution Set

Pre-built SAS, Stata, and SPSS versions of the *Child Residence ZIP Codes by Wave* data set are made available to qualified users of the MiCDA Enclave Virtual Desktop Environment. No manipulation of the distribution file set is required on the part of the user.

2. By-Wave Analysis:

The HRS household-member/child identifiers (OPN) were primarily designed to link the records with other records in a given wave; they were not optimized for merging records longitudinally across waves nor were they subjected to cross-wave consistency checks. Errors in identifiers have crept in across time. Given this, one option is to develop an analysis plan based on merging information from single-wave household-member/child records with single-wave respondent records and then merging the resulting respondent records longitudinally. Respondent records can reliably be merged longitudinally using Household Identifier (HHID) and Person Number (PN). We recommend this option if it accommodates your analytic needs. To extract Child ZIP Code information for an individual wave, filter on YEAR, as in the following SAS snippit:

```
data mylib.hist2022_tmp; set mylib.childzipxwave; where  YEAR eq 2022; run;
```

3. By-Wave Data Management using SAS.

The file that results from the process described in Section 3d, above can be modified to include variables and/or wave-years that are of analytic interest to you. Two examples of SAS procedures that create analysis files extending from 2022 backwards through time are provided below. If you are using Stata (see below), you can specify equivalent statements.

Example 1: Create history of zip codes for OPNs in 2022 wave, transposing by-wave ZIP data from long to wide.

```
/* Transpose long to wide */
proc transpose data=mylib.childzipxwave out=work.tmpOpnZip prefix=ZIP;
by hhid subhh opn;
id year; var ZIP; run;
proc sort data=work.tmpOpnZip; by hhid subhh opn; run;

/* Select 2022 OPNs */;
data mylib.hist2022_tmp; set mylib.childzipxwave; where YEAR eq 2022; run;
proc sort data=mylib.hist2022_tmp out=mylib.hist2022; by hhid subhh opn; run;

/* Merge to create cross-wave ZIP code file for 2022 OPNs */
data mylib.ziphist2004_2022;
RETAIN
HHID SUBHH OPN
ZIP2004 ZIP2006 ZIP2008
ZIP2010 ZIP2012 ZIP2014
ZIP2016 ZIP2018 ZIP2020 ZIP2022;
Merge mylib.hist2022(in=a) mylib.tmpOpnZip(in=b) ;
by hhid subhh opn;
if a and b then output;
```

```
keep HHID SUBHH OPN ZIP2: ;
run;
```

Example 2: Create longitude/latitude historical file for 2022 OPNs. Since PROC TRANSPOSE has a one-variable limit, we get longitude, then latitude and merge the results before performing the 2022 linkage.

```
/* Get longitude */
proc transpose data=mylib.childzipxwave out=work.wantA prefix=LONG;
by hhid subhh opn;
id year; var LONG;
run;

/* get latitude */
proc transpose data=mylib.childzipxwave out=work.wantB prefix=LAT;
by hhid subhh opn;
id year; var LAT;
run;

/* 2c. Put longitude and latitude together */
proc sort data=work.wantA; by HHID SUBHH OPN; run;
proc sort data=work.wantB; by HHID SUBHH OPN; run;

data work.longlat;
retain HHID SUBHH OPN
   LONG2004 LAT2004
   LONG2006 LAT2006
   LONG2008 LAT2008
   LONG2010 LAT2010
   LONG2012 LAT2012
   LONG2014 LAT2014
   LONG2016 LAT2016
   LONG2018 LAT2018
   LONG2020 LAT2020
   LONG2022 LAT2022
   ;
Merge work.wantA(in=a) work.wantB(in=b) ;
by hhid subhh opn;
if a and b then output;
keep HHID SUBHH OPN LONG2: LAT2: ;
run;

/* Select 2022 OPNs */
data work.hist2022_tmp; set mylib.childzipxwave; where  YEAR eq 2022; run;
proc sort data=work.hist2022_tmp out=work.hist2022; by hhid subhh opn; run;

/* Create history of zip centroids (Long/Lat) for the 2022 OPNs */
data mylib.LongLat_2004_2022;
   retain HHID SUBHH OPN YEAR
   LONG2004 LAT2004 LONG2006 LAT2006
   LONG2008 LAT2008 LONG2010 LAT2010
   LONG2012 LAT2012 LONG2014 LAT2014
   LONG2016 LAT2016 LONG2018 LAT2018
   LONG2020 LAT2020 LONG2022 LAT2022;
merge work.hist2022_tmp(in=a) work.longlat(in=b) ;
by hhid subhh opn;
```

```
if a and b then output;
run;
```

4. By-Wave to Cross-Wave Data Management using Stata.

```
* Example 1: Create cross wave ZIP codes file for each OPN
clear
* get child zipcode by-wave file
use D:\myfolder\CHILDZIPXWAVE.dta.

* select desired variable (ZIP) as well as ID variables
keep HHID SUBHH OPN YEAR ZIP

* convert long to wide
reshape wide ZIP, i(HHID SUBHH OPN) j(YEAR)
save D:\myfolder\widezip

* Example 2: Cross wave LONG/LAT for each OPN
clear
* get child zipcode by-wave file
use D:\myfolder\CHILDZIPXWAVE.dta.

* select desired variable (ZIP) as well as ID variables
keep HHID SUBHH OPN YEAR LONG LAT

* convert long to wide
reshape wide LONG LAT, i(HHID SUBHH OPN) j(YEAR)
save D:\myfolder\widelonglat

* Example 3: Subset 2022 OPNs
clear
* get child zipcode crosswave file 2022 records
use D:\myfolder\CHILDZIPXWAVE.dta if (YEAR==2022)
describe
* select the vars that we want to keep for 2022
keep HHID SUBHH OPN
describe
save D:\myfolder\wave2022

* Example 4: Merge datasets
merge 1:1 HHID SUBHH OPN using D:\myfolder\widezip.dta
save D:\myfolder\datamerged_data
```