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Socioeconomic and Demographic Covariate Data for Mortality Research

A Curated Dataset with Consistent, Multi-Source Integration

Mortality and Longevity

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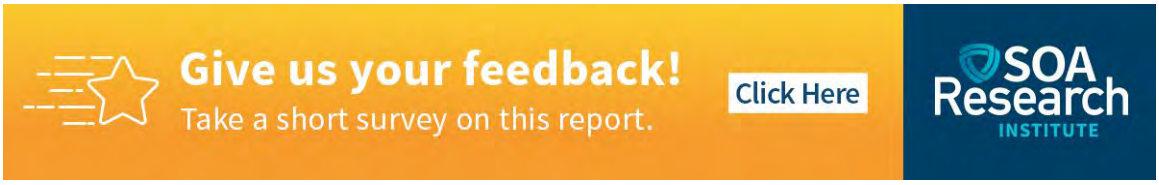

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Socioeconomic and Demographic Covariate Data for Mortality Research

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Executive Summary

This report documents the construction of a merged dataset that compiles a wide range of socioeconomic and demographic variables from the American Community Survey (ACS) and the Decennial Census. The dataset is organized at the county, state, and national levels and is designed to support future research on mortality heterogeneity by providing consistent, well-documented covariates commonly used in mortality modeling.

Mortality plays a foundational role in actuarial practice, underpinning the design and management of life-contingent financial products. Understanding the relationship between mortality and socioeconomic factors is essential for promoting equity, improving risk assessment, and supporting data-driven product and policy development. Although this dataset does not include mortality data itself, it provides a validated set of covariates that can be linked with external mortality outcomes to support a wide range of actuarial and public health analyses.

The construction process included consistent schema design, geographic identifier integration, and metadata documentation. A three-pronged validation framework was used to verify consistency across geographic hierarchies, internal coherence within aggregated variables, and alignment between ACS and Census sources. The results demonstrate strong data reliability, with most discrepancies traceable to known limitations of survey data such as sampling variation or non-additive fields.

Nonetheless, several limitations apply. These include potential changes in county boundaries, shifts in binning or variable definitions over time, and estimation error in reported margins of error—particularly when aggregating variables with unknown dependence structures. As with all survey-based data, common issues such as sampling error, nonresponse bias, and measurement inaccuracies should be considered when using the dataset for statistical analysis.

Despite these limitations, the dataset offers a carefully constructed resource for supporting future academic and industry research on mortality and its socioeconomic determinants. It is intended as a foundation for linking with external mortality data, enabling more robust and equitable analyses across populations and regions.

Section 1 Introduction

Mortality assumptions virtually underpin all insurance and pension products that involve life-contingent cash flows, from life insurance and annuities to long-term care and disability coverage. Therefore, accurate understanding and modeling of mortality play an important role in managing these products, including pricing, reserving, and capital management. Given their practical importance, there has been growing scholarly interest in the granular study of mortality patterns.

It has long been acknowledged that mortality is not uniform across the population. Individuals differ in their mortality and longevity due to a wide array of factors, such as race, ethnicity, income level, family structure, sex, place of birth, and access to healthcare. These differences are not merely academic; instead, they have real financial consequences in the design and management of insurance products. For example, underestimating mortality improvements among certain groups may lead to underpriced annuities or insufficient reserves for long-term liabilities. Conversely, overlooking mortality disadvantages faced by other groups can create unintentional inequities in risk pooling or benefit adequacy.

Understanding the drivers of mortality heterogeneity is particularly crucial in the recent market environment, where insurers are increasingly called upon to promote equity, improve risk segmentation, and meet regulatory expectations for fairness and transparency. Disaggregated mortality data enables actuaries and researchers to investigate patterns of inequality, assess the impact of emerging risks on vulnerable populations, and explore the interactions between demographic change and financial sustainability. Moreover, the incorporation of such insights into actuarial models enhances actuaries' capacity to support inclusive product innovation and sound public policy.

This project responds directly to this practical need by systematically compiling and documenting a merged dataset at the national, state, and county levels. The dataset includes socioeconomic and demographic variables, thus providing a solid foundation for future academic and industry research focused on understanding, explaining, and addressing the multifaceted dimensions of mortality in the U.S. population. In particular, the complied datasets are intended to supplement the data on mortality by socioeconomic status presented in the Society of Actuaries Research Institute (SOA) project on Mortality by Socioeconomic Category in the United States (Barbieri, 2022). The socioeconomic and demographic variables are primarily collected from the American Community Survey (ACS) and the Decennial Census. The selection of variables included in the compiled database reflects the research team's actuarial and economic perspectives and it is informed by the insightful guidance of an experienced Project Oversight Group.

The authors do not claim that this dataset captures all possible socioeconomic and demographic drivers of mortality heterogeneity, nor that every included variable exhibits a statistically significant relationship with it. Nevertheless, this work aims to make a significant and sustained effort by laying a solid foundation for a reasonably comprehensive dataset, which can promote future work in this increasingly important area of research.

The remainder of this report is organized as follows. Section 2 provides an overview of the ACS and Decennial Census data used in this project. Sections 3 and 4 detail the steps adopted to construct and validate the dataset, respectively. Section 5 discusses the key limitations and considerations associated with the data. Finally, Section 6 presents a data dictionary describing the variables and their definitions included in the compiled dataset.

Section 2 Data sources

The socioeconomic and demographic variables used in this project are extracted from two primary sources: the ACS and the Decennial Census, each of which is described in detail below.

2.1 AMERICAN COMMUNITY SURVEY (ACS)

The ACS, officially launched in 2005, is an ongoing survey conducted by the U.S. Census Bureau that provides vital information on a yearly basis about the nation and its people. The ACS is an invaluable resource for understanding community dynamics, as it offers detailed insights into demographic, social, economic, and housing characteristics.

This compiled dataset includes ACS data spanning from the 2005–2009 period through the 2019–2023 period.

Table 1
KEY FEATURES OF THE ACS

Feature	Explanation
Frequency and coverage	The ACS collects data annually, providing both 1-year and 5-year estimates. The 1-year estimates are available for areas with populations of 65,000 or more, while the 5-year estimates cover all geographic areas down to the block group level. Given that mortality data are available only at the county level and that most counties are below 65,000 population, this compiled dataset is structured accordingly. To maintain consistency across all counties, the ACS 5-year estimates are utilized, which provide comprehensive coverage for every county in the U.S., regardless of population size. Moreover, these estimates aggregate data over a 5-year period, which helps enhance their statistical stability, particularly for areas with smaller populations.
Survey collection methods	Survey data are collected through the internet, mail, telephone interviews, and in-person interviews. The ACS samples approximately 3.5 million addresses annually, representing about 4% of the total US population. A comprehensive weighting methodology is applied to ensure that its estimates reasonably represent the U.S. population. The process involves steps such as based weighting for accounting for sampling design, non-response adjustments, and raking so that survey estimates can match known population totals across different dimensions.
Content	The survey includes questions on topics such as ancestry, citizenship, educational attainment, income, language proficiency, migration, disability, employment, and housing characteristics. The selection of variables included in the compiled dataset is based on the research team's perspectives in actuarial modeling as well as the invaluable practical insights provided by the SOA Project Oversight Group.

2.2 DECENNIAL CENSUS

The Decennial Census is a constitutionally mandated count of every resident in the U.S., conducted every ten years by the U.S. Census Bureau. The primary purpose of the census is to apportion seats in the U.S. House of Representatives and to allocate federal resources among the states based on population counts. The first decennial census dates back to 1790. This inaugural census collected data on the name of the head of each household and the number of individuals in each household, categorized by free white males aged 16 and over, free white males under 16, free white females, all other free persons, and slaves. Over time, the census has evolved to collect more detailed demographic, social, and economic information, reflecting the changing needs of the nation. The most recent census took place in 2020. Notably, it was the first to offer options for responding online or by phone, in addition to the traditional paper questionnaire.

This compiled dataset includes Census data from the years 1980, 1990, 2000, 2010, and 2020.

Table 2

KEY FEATURES OF THE DECENNIAL CENSUS

Feature	Explanation
Frequency and coverage	Conducted every ten years, the census aims to count every person living in the 50 states, the District of Columbia, and the five U.S. territories.
Survey collection methods	Prior to the 2020 Census, the U.S. Census Bureau primarily collected data through mail-in questionnaires and in-person interviews. Households received paper forms via mail, which they completed and returned. If a household did not respond, census enumerators conducted in-person visits to collect the necessary information. The 2020 Census allowed responses online, by phone, or by mail, marking the first time the census offered multiple response options. This modernization aimed to make participation more accessible and improve response rates.
Content	The census collects basic demographic information, including age, sex, race, Hispanic origin, and housing tenure (owner/renter status). Notably, the 2010 Census was the first to use only a short-form questionnaire, as the ACS had taken over the collection of detailed socioeconomic data.

Section 3 Dataset Construction

This section outlines the systematic procedures used to compile and process the socioeconomic and demographic variables from the ACS and the Decennial Census datasets. Each source required its own tailored querying and formatting approach to ensure consistency and reliability across years and geographies.

3.1 QUERY STEPS FOR THE ACS DATA

Both state-level and county-level socioeconomic and demographic data were compiled from the ACS. To facilitate this process, the authors employed the R package “tidycensus”, which provides a streamlined interface to the U.S. Census Bureau’s API. This tool enables efficient data retrieval while ensuring consistency across variables, years, and geographic levels. Key functions used to construct the socioeconomic dataset include:

- get_acs(): Retrieves data from the ACS, allowing specification of geography, variables, and year.
- load_variables(): Lists available variables for a given year and dataset, aiding in variable selection.

The key steps used to construct the ACS-based dataset are as follows:

- Variable Identification: The load_variables() function was employed to identify relevant variable codes across different years. For instance, the authors examined the "Poverty Status by Sex by Age" variables starting from the 2009 ACS and verified their consistency in subsequent years, updating codes as necessary.
- Data Extraction: Using the get_acs() function, the authors extracted 5-year estimates at the county level. The 5-year estimates were chosen for their comprehensive coverage, including all counties regardless of population size, and their enhanced statistical reliability due to larger sample sizes.
- Data Preprocessing:
    - Binning: The authors aggregated detailed categories into broader groups where appropriate (e.g., combining specific age brackets).
    - Missing Values: NA values were addressed by incorporating annotations to maintain data interpretability.
    - Geographic Identifiers: Data were merged with geographic identifiers to ensure accurate county-level alignment.
    - Column Organization: Variables were ordered consistently across years and grouped into thematic tables (e.g., household composition, language proficiency), with total columns placed at the beginning of each group.
- Metadata Management: A lookup table was created, detailing the position and name of each column, facilitating downstream automation and ensuring transparency in data handling.
- Data Export: The finalized datasets were exported as .csv files, ensuring ease of access and reproducibility for future analyses.

3.2 QUERY STEPS FOR THE DECENNIAL CENSUS

For data from the Decennial Census, since the 1980 and 1990 data are not available through the Census Bureau's API, the authors adopted a two-pronged approach: (1) querying summary files from the IPUMS National Historical Geographic Information System (NHGIS), which is a resource that provides free access to aggregate census data and spatial boundary files dating back to 1790 (Manson et al., 2024), and (2) directly processing decennial tables for more recent years using the Census Bureau's API.

- NHGIS Queries:
  - Constructed NHGIS queries by specifying datasets (e.g., 1980 Census Summary File 2b) and corresponding table IDs.
  - Queried the data using the define_extract_nhgis() function and loaded each file as a separate R object.
  - Used the ipums_var_info() function to identify variable names and applied transformations to match the authors' naming and binning conventions.
- Combining and Structuring:
  - Merged multiple summary files within each census year at the county level to form a single year-specific dataset.
  - Merged across census years (e.g., 1980, 1990) to build a time-series county-level file.
  - Integrated geographic identifiers (e.g., state USPS codes, county FIPS).
- Modern Census Tables (2000–2020):
  - Used the load_variables() function from the R package "tidycensus", to identify variables across 2000, 2010, and 2020.
  - Queried data using the get_decennial() function and merged them with the NHGIS datasets.
- Post-Processing:
  - Binned and formatted variables consistently.
  - Filled NA values with annotations.
  - Ordered columns and grouped variables into logical blocks, as in the ACS datasets.
  - Final datasets were saved as .csv files.

Section 4 Dataset Validation

To ensure the accuracy and internal consistency of the compiled dataset, the authors implemented a structured validation process using three complementary methods. These methods verify that the data are logically consistent across geographic levels, internally coherent in their categorical aggregations, and align between sources.

4.1 VALIDATION METHOD 1: GEOGRAPHIC SUMMATION CONSISTENCY

The authors first verified that aggregated values at the county level correctly sum to the corresponding state totals, and that state totals correctly sum to the national level. This method was applied to both ACS and Census datasets.

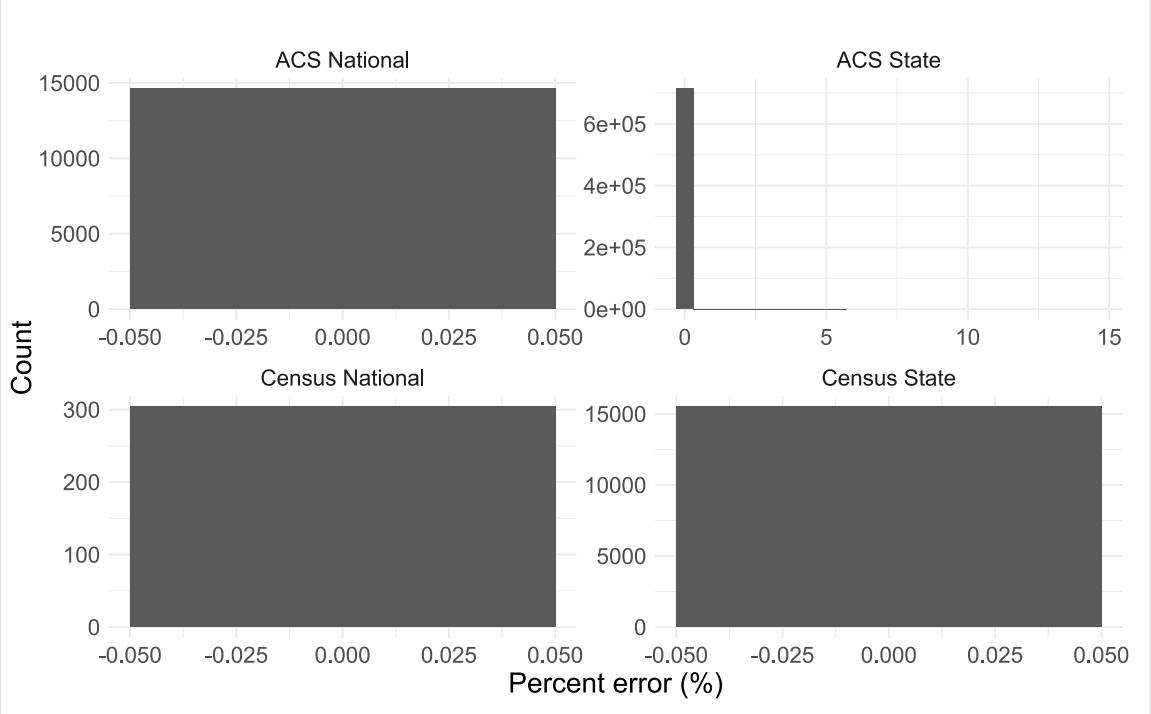
To be specific, for each socioeconomic variable included in the complied data, the following validation steps were conducted:

- Aggregate county-level values to state totals.
- Aggregate state-level values to national totals.
- Calculate the difference between these computed totals and the reported values at each level directly extracted from the Census Bureau's API.
- Inspect the distributions of these relative percentage differences using histograms.

The differences were generally centered tightly around zero, confirming that complied data was properly implemented. Small deviations were observed, often attributable to non-additive variables such as medians or rounding artifacts. As an illustration example, Figure 1 presents the distributions of these relative percentage differences under this validation method.

Figure 1

HISTOGRAM OF THE DISTRIBUTIONS OF THE RELATIVE PERCENTAGE DIFFERENCES BETWEEN THE AGGREGATE VALUES TO THE DIRECTLY EXTRACTED TOTALS.



4.2 VALIDATION METHOD 2: CATEGORICAL SUMMATION CONSISTENCY

Next, the authors verified that the reported totals in key categories (e.g., race, household type, occupation, age, education) matched the sum of their components. For example, the total population was compared to the sum of racial subgroups; total households were compared to family and non-family households.

For each dataset (county, state, national), the following validation steps were conducted:

- Define logical groups of component variables based on their inherent relationships.
- Compute the error as the difference between the sum of components and the reported total directly extracted from the Census Bureau's API.
- Inspect the distribution of these relative percentage differences using histograms.

The listing of the subgroups adding up to the total is summarized in Table 3 and Table 4.

Table 3
SUMMARY OF VALIDATION GROUPING FOR THE CENSUS DATASET.

Aggregate group	Subgroups
Total population (by race)	White population; Black population; American Indian and Alaska Native population; Asian population; Hawaiian/Pacific Islander population; Other race population; Two or more races population
Total households	Family households; Non-family households
Total population (by gender)	Male population; Female population
Total population (by age and gender)	Males under 6 years old; Males between 6 and 17 or 18 years old; Males between 18 or 19 years old to 24 or 25 years old; Males between 25 or 26 years old to 34 years old; Males between 35 and 44 years old; Males between 45 and 54 years old; Males between 55 and 64 years old; Males between 65 and 74 years old; Males older than 75 years old; Females under 6 years old; Females between 6 and 17 or 18 years old; Females between 18 or 19 years old to 24 or 25 years old; Females between 25 or 26 years old to 34 years old; Females between 35 and 44 years old; Females between 45 and 54 years old; Females between 55 and 64 years old; Females between 65 and 74 years old; Females older than 75 years old
Total population (by education level and gender)	Males that are less than high school graduates; Males that are high school graduates; Males that completed some college or have an Associate's degree; Males that have a Bachelor's degree or higher; Females that are less than high school graduates; Females that are high school graduates; Females that completed some college or have an Associate's degree; Females that have a Bachelor's degree or higher

Table 4
SUMMARY OF VALIDATION GROUPING FOR THE ACS DATASET.

Aggregate group	Subgroups
Total population	White population; Black population; American Indian and Alaska Native population; Asian/Pacific Islander population; Asian population; Hawaiian/Pacific Islander population; Other race population; Two or more races population
Total households	Family households; Non-family households
Employed population 16 years old and older	Males in management occupations; Males in service occupations; Males in sales occupations; Males in farming occupations; Males in production occupations; Males in construction occupations; Males in labor occupations; Females in management occupations; Females in service occupations; Females in sales occupations; Females in farming occupations; Females in production occupations; Females in construction occupations; Females in labor occupations

Similarly, errors in the Decennial Census data were essentially zero across all categories, indicating perfect internal alignment. Errors associated with the ACS data clustered closely around zero. These discrepancies reflect sampling variation inherent to the survey-based design of the ACS.

4.3 VALIDATION METHOD 3: COMPARISION BETWEEN ACS AND DECENNIAL CENSUS

Lastly, the authors compared variables that were reported in both the ACS and the Decennial Census, focusing on 2010 and 2020, where both sources report comparable values.

For each dataset (county, state, national), the following validation steps were conducted:

- Identify common variables available in both the ACS and Decennial Census datasets.
- Pivot both datasets into long form and align observations by variable and year.
- Inspect their differences by plotting ACS values against Census values with a reference identity line.

The data points closely followed the identity line, as expected. Minor deviations reflected known sampling variability in ACS estimates relative to the more complete enumeration provided by the Decennial Census data.

Collectively, these three validation methods demonstrate that the compiled data are internally coherent, geographically consistent, and appropriately aligned across sources. The results confirm the high reliability of the dataset for both exploratory and statistical analysis, while acknowledging occasional anomalies that are likely explainable and statistically negligible. To identify the common variables, please refer to the data dictionary documented in Section 6 of this report.

Section 5 Dataset Limitations

While the authors have taken great care to construct a comprehensive and consistent dataset from ACS and Decennial Census sources, users should be aware of several limitations that may affect interpretation and analysis. These limitations reflect both structural issues in the source data and methodological challenges inherent in working with large-scale survey data.

One limitation arises from the possibility of temporal inconsistencies in geographic boundaries. County definitions and boundaries may change over time due to administrative restructuring or reclassification. As a result, comparing statistics across years may not always refer to equivalent geographic units, which can complicate longitudinal analyses. Similarly, the way certain variables are binned can shift from one year to another. For example, age groups reported in the ACS or Census may vary in granularity or cutoffs, making it difficult to track trends consistently without applying additional transformations or assumptions. However, the impact of these temporal inconsistencies is likely to be minor in statistical analyses examining the relationship between mortality and its socioeconomic drivers.

Another limitation concerns ambiguity in variable definitions. Some variables, such as gender, race, or household structure, may lack clear or stable definitions over time or across sources. For instance, the concept of gender has evolved in public understanding and data collection practices, but federal surveys have only recently begun to recognize non-binary or transgender identities. As a result, earlier data may reflect outdated or incomplete classifications that do not align with current standards or lived experiences.

The margins of error (MOEs) provided by the ACS introduce another layer of complexity. While MOEs provide valuable statistical information about the uncertainty of survey-based estimates—crucial for constructing confidence intervals and conducting hypothesis tests—they are themselves estimated quantities subject to error, particularly for small geographic areas or rare population subgroups. Moreover, aggregating margins of error across variables or geographic levels is methodologically challenging, as it typically assumes independence among variables—an assumption that often does not hold. The lack of information on the joint distribution or correlation structure among variables means that aggregate uncertainty may be under- or overestimated, depending on the underlying dependencies.

Finally, as both the ACS and Decennial Census are fundamentally survey-based data products, they inherit the general limitations of survey methodology. Sampling error is unavoidable in ACS estimates, as only a subset of the population is surveyed. Nonresponse bias may also occur, as individuals or households that fail to respond may systematically differ from respondents in ways that are not fully corrected by weighting. Measurement error is another concern, particularly for sensitive or complex topics such as income, education, or identity, where responses may be imprecise or inaccurate due to misunderstanding, misreporting, or proxy responses. Additionally, the multiyear structure of ACS 5-year estimates means that the data represent averages over time, which may mask short-term fluctuations or sudden changes in the population.

Nevertheless, these limitations do not negate the value of the dataset but rather frame its appropriate use. The dataset should be viewed as a solid foundation for descriptive and exploratory analyses, with care taken when applying it to statistical modeling or policy evaluation tasks that require precise inference or high temporal resolution.

Section 6 Data Dictionary

This data dictionary is organized by thematic sections. Where applicable, each section includes sub-sections arranged in alphabetical order. The dictionary includes four key columns: Variable (the variable name used in the dataset), Label (a description of the variable), Type (denoting whether the variable is continuous [Cont] or categorical [Categ]), and Source (indicating the variable's origin—ACS, Census, or both).

The authors' datasets include missing values. Table 5 defines the code used: one indicates that data is not available because it was not collected, and the other indicates that the margin of error can be treated as zero.

Table 5
MISSING VALUE CODES.

Value	Meaning	Source
-888888888	The estimate or margin of error is not applicable or not available.	ACS, Census
-555555555	A margin of error is not applicable because the associated estimate is based on an independently controlled population or housing value. As a result, the estimate has no sampling variability, and the margin of error can be considered zero.	ACS

Both the ACS and the Census provide race-specific iterations of many variables to allow for analysis by race and ethnicity. These iterations repeat the same variable for different racial and ethnic groups. For variables with race-specific versions, a prefix system is used to indicate the corresponding population group, as shown in Table 6.

Table 6
PREFIX USED FOR VARIABLES THAT INCLUDE RACE-SPECIFIC ITERATIONS.

Prefix	Meaning
WHI_	Variable is for the White alone population
BLA_	Variable is for the Black alone population
AIA_	Variable is for the American Indian or Alaska Native alone population
ASI_	Variable is for the Asian alone population
HPI_	Variable is for the Hawaiian or Pacific Islander alone population
OTR_	Variable is for the population of some other race alone
TMR_	Variable is for the population of those with two or more races
WNH_	Variable is for the White alone non-Hispanic population
HIS_	Variable is for the Hispanic population

Variables sourced from the ACS include both a point estimate and a 90% margin of error. The suffixes displayed in Table 7 are used to distinguish between these values. When variables are derived from the aggregation of multiple ACS variables, the suffix M_ADJ is used to identify margins of error that have been adjusted using the moe_sum() function from the tidycensus R package.

The definitions of the variables are based on the 2023 Subject Definitions from the American Community Survey and the Puerto Rico Community Survey, available at https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2023_ACSSubjectDefinitions.pdf.

Table 7
SUFFIX USED FOR VARIABLES SOURCES FROM THE AMERICAN COMMUNITY SURVEY (ACS).

Suffix	Meaning
_EST	Estimate column
_MOE	90% margin of error column
_MOE_ADJ	90% margin of error column that was created from a sum of other columns, potentially introducing further error

Several variables in the dataset are release-dependent (mainly in Section 6.4), meaning their age group definitions vary across different ACS data releases due to changes in how age bins were constructed. For example, one variable may represent ages 6–17 in a given year but 6–18 in another; another may cover ages 18–24 in one release and 19–25 in a different one. These inconsistencies primarily affect younger age groups, where mortality rates are typically low. Consequently, the impact on most analyses related to mortality is minimal. To maintain fidelity to the source data and avoid introducing assumptions through manual harmonization, these variables are preserved in their original, release-specific forms.

6.1 GEOGRAPHIC IDENTIFIERS

6.1.1 COUNTY-SPECIFIC IDENTIFIERS

County-level FIPS codes have five digits, of which the first two represent the FIPS code of the state to which the county belongs, and the last three uniquely identify the county within that state.

County decile data is obtained from the research project *Mortality by Socioeconomic Category in the United States* (Barbieri, 2022).

Table 8
COUNTY-SPECIFIC VARIABLES

Variable	Label	Type	Source
County	County name	Categ	ACS, Census
County_FIPS	Census county identifier	Categ	ACS, Census
Decile	County decile, after ranking on SES score and population weight	Categ	ACS, Census
Aggregates	County grouping code for counties that had less than 10,000 inhabitants at any one point	Categ	ACS, Census

6.1.2 STATE-LEVEL AND COUNTY-LEVEL DATA

The USPS state abbreviation is a two-letter code used by the United States Postal Service to represent each state in mailing addresses.

The Census state identifier, part of the FIPS (Federal Information Processing Standards) code system, is a two-digit numeric code assigned by the U.S. Census Bureau to identify each state.

The authors' data include all fifty (50) states and Washington, D.C. The list of USPS state abbreviations and FIPS codes is provided in Table 10.

Table 9
STATE- AND COUNTY-LEVEL VARIABLES

Variable	Label	Type	Source
State	State name	Categ	ACS, Census
State_USPS	USPS state abbreviation	Categ	ACS, Census
State_FIPS	Census state identifier	Categ	ACS, Census

Table 10
USPS STATE ABBREVIATIONS AND FIPS

State	USPS Abbreviation	FIPS Code	State	USPS Abbreviation	FIPS Code
Alabama	AL	1	Montana	MT	30
Alaska	AK	2	Nebraska	NE	31
Arizona	AZ	4	Nevada	NV	32
Arkansas	AR	5	New Hampshire	NH	33
California	CA	6	New Jersey	NJ	34
Colorado	CO	8	New Mexico	NM	35
Connecticut	CT	9	New York	NY	36
Delaware	DE	10	North Carolina	NC	37
District of Columbia	DC	11	North Dakota	ND	38
Florida	FL	12	Ohio	OH	39
Georgia	GA	13	Oklahoma	OK	40
Hawaii	HI	15	Oregon	OR	41
Idaho	ID	16	Pennsylvania	PA	42
Illinois	IL	17	Rhode Island	RI	44
Indiana	IN	18	South Carolina	SC	45
Iowa	IA	19	South Dakota	SD	46
Kansas	KS	20	Tennessee	TN	47
Kentucky	KY	21	Texas	TX	48
Louisiana	LA	22	Utah	UT	49
Maine	ME	23	Vermont	VT	50
Maryland	MD	24	Virginia	VA	51
Massachusetts	MA	25	Washington	WA	53
Michigan	MI	26	West Virginia	WV	54
Minnesota	MN	27	Wisconsin	WI	55
Mississippi	MS	28	Wyoming	WY	56
Missouri	MO	29			

6.2 DEMOGRAPHICS

6.2.1 AGE

The age classification is based on the age of the person in completed years at the time of interview (i.e., age at last birthday).

These age bins are used for variables related to the number of health insurance coverage types.

Table 11
AGE VARIABLES

Variable	Label	Type	Source
Pop_Under18or19	Population under 18 or 19 years old (release dependent)	Cont	ACS
Pop_18or19_34	Population between 18 or 19 and 34 years old (release dependent)	Cont	ACS
Pop_35_64	Population between 35 and 64 years old	Cont	ACS
Pop_65Over	Population 65 years old and older	Cont	ACS

6.2.2 AGE AND SEX

Age classification was determined based on the respondent's age in complete years at the time of the interview. Biological sex was recorded based on the individual's selection of either "male" or "female."

Table 12
AGE AND SEX VARIABLES

Variable	Label	Type	Source
M_Pop	Male population	Cont	ACS
F_Pop	Female Population	Cont	ACS
M_Under6	Males under 6 years old	Cont	ACS
M_6_17or18	Males between 6 and 17 or 18 years old (release dependent)	Cont	ACS
M_18or19_24or25	Males between 18 or 19 and 24 or 25 years old (release dependent)	Cont	ACS
M_25or26_34	Males between 25 or 26 and 34 years old (release dependent)	Cont	ACS
M_35_44	Males between 35 and 44 years old	Cont	ACS
M_45_54	Males between 45 and 54 years old	Cont	ACS
M_55_64	Males between 55 and 64 years old	Cont	ACS
M_65_74	Males between 65 and 74 years old	Cont	ACS
M_75Over	Males 75 years old or older	Cont	ACS
F_Under6	Females under 6 years old	Cont	ACS
F_6_17or18	Females between 6 and 17 or 18 years old (release dependent)	Cont	ACS
F_18or19_24or25	Females between 18 or 19 and 24 or 25 years old (release dependent)	Cont	ACS
F_25or26_34	Females between 25 or 26 and 34 years old (release dependent)	Cont	ACS
F_35_44	Females between 35 and 44 years old	Cont	ACS
F_45_54	Females between 45 and 54 years old	Cont	ACS
F_55_64	Females between 55 and 64 years old	Cont	ACS
F_65_74	Females between 65 and 74 years old	Cont	ACS
F_75Over	Females 75 years old or older	Cont	ACS

6.2.3 FAMILIES AND LIVING ARRANGEMENTS

Table 13
FAMILY AND HOUSEHOLD STRUCTURE VARIABLES

Variable	Label	Type	Source
Prs_InHH	Total persons in households	Cont	ACS, Census
Sp_InHH	Persons in households that are married to and living with householder	Cont	ACS, Census
OppSexSp_InHH	Persons in households that are married to and living with an opposite sex householder	Cont	ACS, Census
SameSexSp_InHH	Persons in households that are married to and living with a same sex householder	Cont	ACS, Census
Ch_InHH	Persons in households that are the biological, step, or adopted child of the householder	Cont	ACS, Census
AdptCh_InHH	Persons in households that are the adopted child of the householder	Cont	Census
BioCh_InHH	Persons in households that are the biological child of the householder	Cont	Census
StepCh_InHH	Persons in households that are the stepchild of the householder	Cont	Census
GrCh_InHH	Persons in households that are the grandchild of the householder	Cont	ACS, Census
HHers_Alone	Persons in households living alone	Cont	Census
M_HHers_Alone	Male householders living alone in nonfamily households	Cont	ACS, Census
F_HHers_Alone	Female householders living alone in nonfamily households	Cont	ACS, Census
HH	Total number of households	Cont	ACS, Census
FamHH	Households that contain one or more people related to the householder by birth, marriage, or adoption	Cont	ACS, Census
NonFamHH	Households that contain a householder living alone or with non-relatives only	Cont	ACS, Census
TwoPrs_FamHH	Family households that contain 2 persons	Cont	ACS, Census

Variable	Label	Type	Source
ThreePrs_FamHH	Family households that contain 3 persons	Cont	ACS, Census
FourPrs_FamHH	Family households that contain 4 persons	Cont	ACS, Census
FivePrs_FamHH	Family households that contain 5 persons	Cont	ACS, Census
SixPrs_FamHH	Family households that contain 6 persons	Cont	ACS, Census
SevenPrs_FamHH	Family households that contain 7 or more persons	Cont	ACS, Census
OnePrs_NonFamHH	Non-family households that contain 1 person	Cont	ACS, Census
TwoPrs_NonFamHH	Non-family households that contain 2 persons	Cont	ACS, Census
ThreePrs_NonFamHH	Non-family households that contain 3 persons	Cont	ACS, Census
FourPrs_NonFamHH	Non-family households that contain 4 persons	Cont	ACS, Census
FivePrs_NonFamHH	Non-family households that contain 5 persons	Cont	ACS, Census
SixPrs_NonFamHH	Non-family households that contain 6 persons	Cont	ACS, Census
SevenPrs_NonFamHH	Non-family households that contain 7 or more persons	Cont	ACS, Census

6.2.3.1 HOUSEHOLD

A household includes all the people who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied as separate living quarters.

6.2.3.2 HOUSEHOLDER

One person in each household is designated as the householder. In most cases, this is the person or one of the people in whose name the home is owned, being bought, or rented and who is listed on line one of the survey questionnaire.

6.2.3.3 BIOLOGICAL SON OR DAUGHTER

The son or daughter of the householder by birth.

6.2.3.4 ADOPTED SON OR DAUGHTER

The son or daughter of the householder by legal adoption.

6.2.3.5 STEPSON OR STEPDAUGHTER

The son or daughter of the householder through marriage but not by birth, excluding sons-in-law and daughters-in-law. If a stepson or stepdaughter of the householder has been legally adopted by the householder, the child is then classified as an adopted child.

6.2.3.6 GRANDCHILD

The grandson or granddaughter of the householder.

6.2.3.7 FAMILY HOUSEHOLDS

A family consists of a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.

6.2.3.8 NONFAMILY HOUSEHOLD

A householder living alone or with non-relatives only. Unmarried couple households, whether opposite-sex or same-sex, with no relatives of the householder present are tabulated in nonfamily households.

6.2.4 FOREIGN BORN

The foreign-born population includes anyone who was not a U.S. citizen at birth. This includes respondents who indicated they were a U.S. citizen by naturalization or not a U.S. citizen.

Table 14
FOREIGN BORN VARIABLES

Variable	Label	Type	Source
FrgnBorn_Pop	Foreign-born population	Cont	ACS
FrgnBorn_Eur	Foreign-born population born in Europe	Cont	ACS
FrgnBorn_Asia	Foreign-born population born in Asia	Cont	ACS
FrgnBorn_LatAm	Foreign-born population born in Latin America	Cont	ACS
M_FrgnBorn	Foreign-born male population	Cont	ACS
M_FrgnBorn_Eur	Foreign-born male population born in Europe	Cont	ACS
M_FrgnBorn_Asia	Foreign-born male population born in Asia	Cont	ACS
M_FrgnBorn_LatAm	Foreign-born male population born in Latin America	Cont	ACS
F_FrgnBorn	Foreign-born female population	Cont	ACS
F_FrgnBorn_Eur	Foreign-born female population born in Europe	Cont	ACS
F_FrgnBorn_Asia	Foreign-born female population born in Asia	Cont	ACS
F_FrgnBorn_LatAm	Foreign-born female population born in Latin America	Cont	ACS

6.2.5 POPULATION ESTIMATES

Table 15
POPULATION ESTIMATE VARIABLE

Variable	Label	Type	Source
Pop	Total population	Cont	ACS, Census

6.2.6 RACE AND ETHNICITY

Race and ethnicity data are based on self-identification.

Table 16
RACE AND ETHNICITY VARIABLES

Variable	Label	Type	Source
White_Pop	White population	Cont	ACS, Census
Black_Pop	Black population	Cont	ACS, Census
AmIndAlas_Pop	American Indian and Alaska Native population	Cont	ACS, Census
Asian_Pop	Asian population	Cont	ACS, Census
AsiPacIsl_Pop	Asian and Pacific Islander population	Cont	Census
HawPacIsl_Pop	Hawaiian or Pacific Islander population	Cont	ACS, Census
OthRace_Pop	Population of other races not specified in the given release	Cont	ACS, Census
TwoRaces_Pop	Population of any two or more races	Cont	ACS, Census
Hisp_Pop	Hispanic population	Cont	ACS, Census
White_Hisp_Pop	White Hispanic population	Cont	ACS, Census
Black_Hisp_Pop	Black Hispanic population	Cont	ACS, Census
AmIndAla_Hisp_Pop	American Indian and Alaska Native Hispanic population	Cont	ACS, Census
Asian_Hisp_Pop	Asian Hispanic population	Cont	ACS, Census
AsiPacIsl_Hisp_Pop	Asian and Pacific Islander Hispanic population	Cont	Census
HawPacIsl_Hisp_Pop	Hawaiian or Pacific Islander Hispanic population	Cont	ACS, Census
OthRace_Hisp_Pop	Hispanic population of other races not specified in the given release	Cont	ACS, Census
TwoRaces_Hisp_Pop	Hispanic population of any two or more races	Cont	ACS, Census
NonHisp_Pop	Non-Hispanic population	Cont	ACS, Census
White_NonHisp_Pop	White non-Hispanic population	Cont	ACS, Census
Black_NonHisp_Pop	Black non-Hispanic population	Cont	ACS, Census
AmIndAlas_NonHisp_Pop	American Indian and Alaska Native non-Hispanic population	Cont	ACS, Census
Asian_NonHisp_Pop	Asian non-Hispanic population	Cont	ACS, Census

Variable	Label	Type	Source
AsiPacIsl_NonHisp_Pop	Asian and Pacific Islander non-Hispanic population	Cont	Census
HawPacIsl_NonHisp_Pop	Hawaiian or Pacific Islander non-Hispanic population	Cont	ACS, Census
OthRace_NonHisp_Pop	Non-Hispanic population of other races not specified in the given release	Cont	ACS, Census
TwoRaces_NonHisp_Pop	Non-Hispanic population of any two or more races	Cont	ACS, Census

6.3 EDUCATION

Educational attainment is measured for individuals aged 25 and older. Race-specific data are available for these variables. Refer to Table 6 for the prefixes used to identify each racial and ethnic group.

Table 17
EDUCATION VARIABLES

Variable	Label	Type	Source
Pop_Edu25	Population 25 years and over	Cont	ACS, Census
M_Pop_Edu25	Male population 25 years and over	Cont	ACS, Census
M_LessHS	Males with highest level of education less than high school graduate	Cont	ACS, Census
M_HSGrad	Males with highest level of education graduated high school	Cont	ACS, Census
M_SomeColOrAsc	Males with highest level of education some college or Associate's degree	Cont	ACS, Census
M_BachOrHigher	Males with highest level of education Bachelor's degree or higher	Cont	ACS, Census
F_Pop_Edu25	Female population 25 years and over	Cont	ACS, Census
F_LessHS	Females with highest level of education less than high school graduate	Cont	ACS, Census
F_HSGrad	Females with highest level of education graduated high school	Cont	ACS, Census
F_SomeColOrAsc	Females with highest level of education some college or Associate's degree	Cont	ACS, Census
F_BachOrHigher	Females with highest level of education Bachelor's degree or higher	Cont	ACS, Census

6.4 HEALTH INSURANCE

Health insurance coverage is defined to include plans and programs that provide comprehensive health coverage. Plans that offer insurance only for specific conditions or situations, such as cancer or long-term care, are not considered comprehensive. Likewise, other types of insurance—such as dental, vision, life, and disability insurance—are also not considered comprehensive health coverage.

6.4.1 HEALTH INSURANCE COVERAGE

People were considered insured if they reported having at least one of the following: insurance through a current or former employer or union (either their own or a family member's); insurance purchased directly from an insurance company (by themselves or a family member); Medicare (for individuals aged 65 and older or those with certain disabilities); Medicaid, Medical Assistance, or any kind of government-assistance plan for people with low incomes or disabilities; TRICARE or other military health care; or VA coverage (enrollment in VA health care).

Table 18
HEALTH INSURANCE COVERAGE VARIABLES

Variable	Label	Type	Source
M_Under6_Health	Males under 6 years old with health insurance coverage	Cont	ACS
M_Under6_NoHealth	Males under 6 years old without health insurance coverage	Cont	ACS
M_6_17or18_Health	Males between 6 and 17 or 18 years old with health insurance coverage (release dependent)	Cont	ACS
M_6_17or18_NoHealth	Males between 6 and 17 or 18 years old without health insurance coverage (release dependent)	Cont	ACS
M_18or19_24or25_Health	Males between 18 or 19 and 24 or 25 years old with health insurance coverage (release dependent)	Cont	ACS

Variable	Label	Type	Source
M_18or19_24or25_NoHealth	Males between 18 or 19 and 24 or 25 years old without health insurance coverage (release dependent)	Cont	ACS
M_25or26_34_Health	Males between 25 or 26 and 34 years old with health insurance coverage (release dependent)	Cont	ACS
M_25or26_34_NoHealth	Males between 25 or 26 and 34 years old without health insurance coverage (release dependent)	Cont	ACS
M_35_44_Health	Males between 35 and 44 years old with health insurance coverage	Cont	ACS
M_35_44_NoHealth	Males between 35 and 44 years old without health insurance coverage	Cont	ACS
M_45_54_Health	Males between 45 and 54 years old with health insurance coverage	Cont	ACS
M_45_54_NoHealth	Males between 45 and 54 years old without health insurance coverage	Cont	ACS
M_55_64_Health	Males between 55 and 64 years old with health insurance coverage	Cont	ACS
M_55_64_NoHealth	Males between 55 and 64 years old without health insurance coverage	Cont	ACS
M_65_74_Health	Males between 65 and 74 years old with health insurance coverage	Cont	ACS
M_65_74_NoHealth	Males between 65 and 74 years old without health insurance coverage	Cont	ACS
M_75Over_Health	Males 75 years old or older with health insurance coverage	Cont	ACS
M_75Over_NoHealth	Males 75 years old or older without health insurance coverage	Cont	ACS
F_Under6_Health	Females under 6 years old with health insurance coverage	Cont	ACS
F_Under6_NoHealth	Females under 6 years old without health insurance coverage	Cont	ACS
F_6_17or18_Health	Females between 6 and 17 or 18 years old with health insurance coverage (release dependent)	Cont	ACS
F_6_17or18_NoHealth	Females between 6 and 17 or 18 years old without health insurance coverage (release dependent)	Cont	ACS
F_18or19_24or25_Health	Females between 18 or 19 and 24 or 25 years old with health insurance coverage (release dependent)	Cont	ACS
F_18or19_24or25_NoHealth	Females between 18 or 19 and 24 or 25 years old without health insurance coverage (release dependent)	Cont	ACS
F_25or26_34_Health	Females between 25 or 26 and 34 years old with health insurance coverage (release dependent)	Cont	ACS
F_25or26_34_NoHealth	Females between 25 or 26 and 34 years old without health insurance coverage (release dependent)	Cont	ACS
F_35_44_Health	Females between 35 and 44 years old with health insurance coverage	Cont	ACS
F_35_44_NoHealth	Females between 35 and 44 years old without health insurance coverage	Cont	ACS
F_45_54_Health	Females between 45 and 54 years old with health insurance coverage	Cont	ACS
F_45_54_NoHealth	Females between 45 and 54 years old without health insurance coverage	Cont	ACS
F_55_64_Health	Females between 55 and 64 years old with health insurance coverage	Cont	ACS
F_55_64_NoHealth	Females between 55 and 64 years old without health insurance coverage	Cont	ACS
F_65_74_Health	Females between 65 and 74 years old with health insurance coverage	Cont	ACS
F_65_74_NoHealth	Females between 65 and 74 years old without health insurance coverage	Cont	ACS

Variable	Label	Type	Source
F_75Over_Health	Females 75 years old or older with health insurance coverage	Cont	ACS
F_75Over_NoHealth	Females 75 years old or older without health insurance coverage	Cont	ACS

6.4.2 NUMBER OF HEALTH INSURANCE COVERAGE TYPES

Table 19
HEALTH INSURANCE COVERAGE TYPE VARIABLES

Variable	Label	Type	Source
OneTypeHealth_Under18or19	Population under 18 or 19 years old with 1 type of health insurance coverage (release dependent)	Cont	ACS
TwoTypesHealth_Under18or19	Population under 18 or 19 years old with 2 or more types of health insurance coverage (release dependent)	Cont	ACS
NoHealth_Under18or19	Population under 18 or 19 years old with no health insurance coverage (release dependent)	Cont	ACS
OneTypeHealth_18or19_34	Population between 18 or 19 and 34 years old with 1 type of health insurance coverage (release dependent)	Cont	ACS
TwoTypesHealth_18or19_34	Population between 18 or 19 and 34 years old with 2 or more types of health insurance coverage (release dependent)	Cont	ACS
NoHealth_18or19_34	Population between 18 or 19 and 34 years old with no health insurance coverage (release dependent)	Cont	ACS
OneTypeHealth_35_64	Population between 35 and 64 years old with 1 type of health insurance coverage	Cont	ACS
TwoTypesHealth_35_64	Population between 35 and 64 years old with 2 or more types of health insurance coverage	Cont	ACS
NoHealth_35_64	Population between 35 and 64 years old with no health insurance coverage	Cont	ACS
OneTypeHealth_65Over	Population 65 years old and older with 1 type of health insurance coverage	Cont	ACS
TwoTypesHealth_65Over	Population 65 years old and older with 2 or more types of health insurance coverage	Cont	ACS
NoHealth_65Over	Population 65 years old and older with no health insurance coverage	Cont	ACS

6.4.3 PRIVATE HEALTH INSURANCE COVERAGE

Private health insurance is a plan provided through an employer or union, a plan purchased by an individual from a private company, or TRICARE or other military health care.

Table 20
PRIVATE HEALTH INSURANCE COVERAGE VARIABLES

Variable	Label	Type	Source
M_Under6_PrivHealth	Males under 6 years old with private health insurance coverage	Cont	ACS
M_Under6_NoPrivHealth	Males under 6 years old without private health insurance coverage	Cont	ACS
M_6_17or18_PrivHealth	Males between 6 and 17 or 18 years old with private health insurance coverage (release dependent)	Cont	ACS
M_6_17or18_NoPrivHealth	Males between 6 and 17 or 18 years old without private health insurance coverage (release dependent)	Cont	ACS
M_18or19_24or25_PrivHealth	Males between 18 or 19 and 24 or 25 years old with private health insurance coverage (release dependent)	Cont	ACS

Variable	Label	Type	Source
M_18or19_24or25_NoPrivHealth	Males between 18 or 19 and 24 or 25 years old without private health insurance coverage (release dependent)	Cont	ACS
M_25or26_34_PrivHealth	Males between 25 or 26 and 34 years old with private health insurance coverage (release dependent)	Cont	ACS
M_25or26_34_NoPrivHealth	Males between 25 or 26 and 34 years old without private health insurance coverage (release dependent)	Cont	ACS
M_35_44_PrivHealth	Males between 35 and 44 years old with private health insurance coverage	Cont	ACS
M_35_44_NoPrivHealth	Males between 35 and 44 years old without private health insurance coverage	Cont	ACS
M_45_54_PrivHealth	Males between 45 and 54 years old with private health insurance coverage	Cont	ACS
M_45_54_NoPrivHealth	Males between 45 and 54 years old without private health insurance coverage	Cont	ACS
M_55_64_PrivHealth	Males between 55 and 64 years old with private health insurance coverage	Cont	ACS
M_55_64_NoPrivHealth	Males between 55 and 64 years old without private health insurance coverage	Cont	ACS
M_65_74_PrivHealth	Males between 65 and 74 years old with private health insurance coverage	Cont	ACS
M_65_74_NoPrivHealth	Males between 65 and 74 years old without private health insurance coverage	Cont	ACS
M_75Over_PrivHealth	Males 75 years old or older with private health insurance coverage	Cont	ACS
M_75Over_NoPrivHealth	Males 75 years old or older without private health insurance coverage	Cont	ACS
F_Under6_PrivHealth	Females under 6 years old with private health insurance coverage	Cont	ACS
F_Under6_NoPrivHealth	Females under 6 years old without private health insurance coverage	Cont	ACS
F_6_17or18_PrivHealth	Females between 6 and 17 or 18 years old with private health insurance coverage (release dependent)	Cont	ACS
F_6_17or18_NoPrivHealth	Females between 6 and 17 or 18 years old without private health insurance coverage (release dependent)	Cont	ACS
F_18or19_24or25_PrivHealth	Females between 18 or 19 and 24 or 25 years old with private health insurance coverage (release dependent)	Cont	ACS
F_18or19_24or25_NoPrivHealth	Females between 18 or 19 and 24 or 25 years old without private health insurance coverage (release dependent)	Cont	ACS
F_25or26_34_PrivHealth	Females between 25 or 26 and 34 years old with private health insurance coverage (release dependent)	Cont	ACS
F_25or26_34_NoPrivHealth	Females between 25 or 26 and 34 years old without private health insurance coverage (release dependent)	Cont	ACS
F_35_44_PrivHealth	Females between 35 and 44 years old with private health insurance coverage	Cont	ACS
F_35_44_NoPrivHealth	Females between 35 and 44 years old without private health insurance coverage	Cont	ACS
F_45_54_PrivHealth	Females between 45 and 54 years old with private health insurance coverage	Cont	ACS
F_45_54_NoPrivHealth	Females between 45 and 54 years old without private health insurance coverage	Cont	ACS
F_55_64_PrivHealth	Females between 55 and 64 years old with private health insurance coverage	Cont	ACS
F_55_64_NoPrivHealth	Females between 55 and 64 years old without private health insurance coverage	Cont	ACS
F_65_74_PrivHealth	Females between 65 and 74 years old with private health insurance coverage	Cont	ACS

Variable	Label	Type	Source
F_65_74_NoPrivHealth	Females between 65 and 74 years old without private health insurance coverage	Cont	ACS
F_75Over_PrivHealth	Females 75 years old or older with private health insurance coverage	Cont	ACS
F_75Over_NoPrivHealth	Females 75 years old or older without private health insurance coverage	Cont	ACS

6.4.4 PUBLIC HEALTH INSURANCE COVERAGE

Public health coverage includes the federal programs Medicare, Medicaid, and VA Health Care (provided through the Department of Veterans Affairs), as well as the Children's Health Insurance Program (CHIP) and individual state health plans.

Table 21
PUBLIC HEALTH INSURANCE COVERAGE VARIABLES

Variable	Label	Type	Source
M_Under6_PubHealth	Males under 6 years old with public health insurance coverage	Cont	ACS
M_Under6_NoPubHealth	Males under 6 years old without public health insurance coverage	Cont	ACS
M_6_17or18_PubHealth	Males between 6 and 17 or 18 years old with public health insurance coverage (release dependent)	Cont	ACS
M_6_17or18_NoPubHealth	Males between 6 and 17 or 18 years old without public health insurance coverage (release dependent)	Cont	ACS
M_18or19_24or25_PubHealth	Males between 18 or 19 and 24 or 25 years old with public health insurance coverage (release dependent)	Cont	ACS
M_18or19_24or25_NoPubHealth	Males between 18 or 19 and 24 or 25 years old without public health insurance coverage (release dependent)	Cont	ACS
M_25or26_34_PubHealth	Males between 25 or 26 and 34 years old with public health insurance coverage (release dependent)	Cont	ACS
M_25or26_34_NoPubHealth	Males between 25 or 26 and 34 years old without public health insurance coverage (release dependent)	Cont	ACS
M_35_44_PubHealth	Males between 35 and 44 years old with public health insurance coverage	Cont	ACS
M_35_44_NoPubHealth	Males between 35 and 44 years old without public health insurance coverage	Cont	ACS
M_45_54_PubHealth	Males between 45 and 54 years old with public health insurance coverage	Cont	ACS
M_45_54_NoPubHealth	Males between 45 and 54 years old without public health insurance coverage	Cont	ACS
M_55_64_PubHealth	Males between 55 and 64 years old with public health insurance coverage	Cont	ACS
M_55_64_NoPubHealth	Males between 55 and 64 years old without public health insurance coverage	Cont	ACS
M_65_74_PubHealth	Males between 65 and 74 years old with public health insurance coverage	Cont	ACS
M_65_74_NoPubHealth	Males between 65 and 74 years old without public health insurance coverage	Cont	ACS
M_75Over_PubHealth	Males 75 years old or older with public health insurance coverage	Cont	ACS
M_75Over_NoPubHealth	Males 75 years old or older without public health insurance coverage	Cont	ACS
F_Under6_PubHealth	Females under 6 years old with public health insurance coverage	Cont	ACS

Variable	Label	Type	Source
F_Under6_NoPubHealth	Females under 6 years old without public health insurance coverage	Cont	ACS
F_6_17or18_PubHealth	Females between 6 and 17 or 18 years old with public health insurance coverage (release dependent)	Cont	ACS
F_6_17or18_NoPubHealth	Females between 6 and 17 or 18 years old without public health insurance coverage (release dependent)	Cont	ACS
F_18or19_24or25_PubHealth	Females between 18 or 19 and 24 or 25 years old with public health insurance coverage (release dependent)	Cont	ACS
F_18or19_24or25_NoPubHealth	Females between 18 or 19 and 24 or 25 years old without public health insurance coverage (release dependent)	Cont	ACS
F_25or26_34_PubHealth	Females between 25 or 26 and 34 years old with public health insurance coverage (release dependent)	Cont	ACS
F_25or26_34_NoPubHealth	Females between 25 or 26 and 34 years old without public health insurance coverage (release dependent)	Cont	ACS
F_35_44_PubHealth	Females between 35 and 44 years old with public health insurance coverage	Cont	ACS
F_35_44_NoPubHealth	Females between 35 and 44 years old without public health insurance coverage	Cont	ACS
F_45_54_PubHealth	Females between 45 and 54 years old with public health insurance coverage	Cont	ACS
F_45_54_NoPubHealth	Females between 45 and 54 years old without public health insurance coverage	Cont	ACS
F_55_64_PubHealth	Females between 55 and 64 years old with public health insurance coverage	Cont	ACS
F_55_64_NoPubHealth	Females between 55 and 64 years old without public health insurance coverage	Cont	ACS
F_65_74_PubHealth	Females between 65 and 74 years old with public health insurance coverage	Cont	ACS
F_65_74_NoPubHealth	Females between 65 and 74 years old without public health insurance coverage	Cont	ACS
F_75Over_PubHealth	Females 75 years old or older with public health insurance coverage	Cont	ACS
F_75Over_NoPubHealth	Females 75 years old or older without public health insurance coverage	Cont	ACS

6.5 HOUSING

Table 22
HOUSING VARIABLES

Variable	Label	Type	Source
Med_Rent	Median gross rent	Cont	ACS, Census
Med_Mortg_HomeCosts	Median selected monthly ownership costs for mortgaged homes	Cont	ACS, Census
Med_NoMortg_HomeCosts	Median selected monthly ownership costs for homes without a mortgage	Cont	ACS, Census

6.5.1 GROSS RENT

Gross rent is the contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid by the renter (or paid for the renter by someone else).

6.5.2 SELECTED MONTHLY OWNERSHIP COSTS

Selected monthly owner costs are the sum of payments for mortgages, deeds of trust, contracts to purchase, or similar debts on the property (including payments for the first mortgage, second mortgages, home equity loans, and other junior mortgages); real estate taxes; fire, hazard, and flood insurance on the property; utilities (electricity, gas, and water and sewer); and fuels (oil, coal, kerosene, wood, etc.). It also includes, where appropriate, the monthly condominium fee for condominiums and mobile home costs (personal property taxes, site rent, registration fees, and license fees).

6.6 INCOME AND POVERTY

6.6.1 INCOME AND GINI INDEX

Race-specific data are available for Med_HHIncome. Refer to Table 6 for the prefixes used to identify each racial and ethnic group.

Table 23
INCOME AND GINI INDEX VARIABLES

Variable	Label	Type	Source
Med_HHIncome	Median household income in the past 12 months	Cont	ACS
Gini_Index	Gini index of income inequality	Cont	ACS

6.6.1.1 MEDIAN HOUSEHOLD INCOME

The median income for households is based on the distribution of the total number of households and families including those with no income. The definitions of income and household income are provided below:

6.6.1.2 INCOME

Income is the sum of the amounts reported separately for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income.

6.6.1.3 HOUSEHOLD INCOME

This includes the income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not.

6.6.1.4 GINI INDEX

The Gini index of income inequality measures the dispersion of the household income distribution.

6.6.2 POVERTY STATUS IN THE PAST 12 MONTHS

Race-specific data are available for these variables. Refer to Table 6 for the prefixes used to identify each racial and ethnic group.

Table 24
POVERTY STATUS VARIABLES

Variable	Label	Type	Source
PovLvl_Pop	Persons for whom poverty status was determined	Cont	ACS
M_Blw_PovLvl	Males for whom poverty status was determined below the poverty level	Cont	ACS
M_Under5_Blw_PovLvl	Males under 5 years old for whom poverty status was determined below the poverty level	Cont	ACS

Variable	Label	Type	Source
M_5_Blw_PovLvl	Males 5 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_6_11_Blw_PovLvl	Males 6 to 11 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_12_14_Blw_PovLvl	Males 12 to 14 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_15_Blw_PovLvl	Males 15 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_16_17_Blw_PovLvl	Males 16 to 17 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_18_24_Blw_PovLvl	Males 18 to 24 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_25_34_Blw_PovLvl	Males 25 to 34 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_35_44_Blw_PovLvl	Males 35 to 44 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_45_54_Blw_PovLvl	Males 45 to 54 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_55_64_Blw_PovLvl	Males 55 to 64 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_65_74_Blw_PovLvl	Males 65 to 74 years old for whom poverty status was determined below the poverty level	Cont	ACS
M_75Over_Blw_PovLvl	Males 75 years old and older for whom poverty status was determined below the poverty level	Cont	ACS
F_Blw_PovLvl	Females for whom poverty status was determined below the poverty level	Cont	ACS
F_Under5_Blw_PovLvl	Females under 5 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_5_Blw_PovLvl	Females 5 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_6_11_Blw_PovLvl	Females 6 to 11 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_12_14_Blw_PovLvl	Females 12 to 14 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_15_Blw_PovLvl	Females 15 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_16_17_Blw_PovLvl	Females 16 to 17 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_18_24_Blw_PovLvl	Females 18 to 24 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_25_34_Blw_PovLvl	Females 25 to 34 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_35_44_Blw_PovLvl	Females 35 to 44 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_45_54_Blw_PovLvl	Females 45 to 54 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_55_64_Blw_PovLvl	Females 55 to 64 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_65_74_Blw_PovLvl	Females 65 to 74 years old for whom poverty status was determined below the poverty level	Cont	ACS
F_75Over_Blw_PovLvl	Females 75 years old and older for whom poverty status was determined below the poverty level	Cont	ACS
M_Abv_PovLvl	Males for whom poverty status was determined above the poverty level	Cont	ACS
M_Under5_Abv_PovLvl	Males under 5 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_5_Abv_PovLvl	Males 5 years old for whom poverty status was determined above the poverty level	Cont	ACS

Variable	Label	Type	Source
M_6_11_Abv_PovLvl	Males 6 to 11 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_12_14_Abv_PovLvl	Males 12 to 14 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_15_Abv_PovLvl	Males 15 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_16_17_Abv_PovLvl	Males 16 to 17 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_18_24_Abv_PovLvl	Males 18 to 24 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_25_34_Abv_PovLvl	Males 25 to 34 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_35_44_Abv_PovLvl	Males 35 to 44 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_45_54_Abv_PovLvl	Males 45 to 54 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_55_64_Abv_PovLvl	Males 55 to 64 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_65_74_Abv_PovLvl	Males 65 to 74 years old for whom poverty status was determined above the poverty level	Cont	ACS
M_75Over_Abv_PovLvl	Males 75 years old and older for whom poverty status was determined above the poverty level	Cont	ACS
F_Abv_PovLvl	Females for whom poverty status was determined above the poverty level	Cont	ACS
F_Under5_Abv_PovLvl	Females under 5 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_5_Abv_PovLvl	Females 5 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_6_11_Abv_PovLvl	Females 6 to 11 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_12_14_Abv_PovLvl	Females 12 to 14 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_15_Abv_PovLvl	Females 15 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_16_17_Abv_PovLvl	Females 16 to 17 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_18_24_Abv_PovLvl	Females 18 to 24 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_25_34_Abv_PovLvl	Females 25 to 34 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_35_44_Abv_PovLvl	Females 35 to 44 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_45_54_Abv_PovLvl	Females 45 to 54 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_55_64_Abv_PovLvl	Females 55 to 64 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_65_74_Abv_PovLvl	Females 65 to 74 years old for whom poverty status was determined above the poverty level	Cont	ACS
F_75Over_Abv_PovLvl	Females 75 years old and older for whom poverty status was determined above the poverty level	Cont	ACS

6.6.2.1 DETERMINING POVERTY STATUS

The Census Bureau determines who is in poverty using a set of dollar value thresholds that vary by family size and composition. These poverty thresholds depend on three main criteria: the size of the family, the number of children, and, in the case of one- and two-person families, the age of the householder. These thresholds are updated annually

to reflect changes in the cost of living, as measured by the Consumer Price Index for All Urban Consumers (CPI-U). However, they are not adjusted for differences in living costs across regions, states, or local areas.

To assess whether an individual is in poverty, the total income of their family over the past 12 months is compared with the appropriate poverty threshold for that family's size and composition. If the family's income falls below the threshold, every member of the family is considered to be "below the poverty level." For individuals not living with relatives by birth, marriage, or adoption, their own income is compared directly to the applicable poverty threshold to determine their poverty status.

6.6.2.2 INDIVIDUALS FOR WHOM POVERTY STATUS IS DETERMINED

Poverty status was determined for all people except institutionalized people, people in military group quarters, people in college dormitories, and unrelated individuals under 15 years old.

6.6.3 RATIO OF INCOME TO POVERTY LEVEL

Table 25

RATIO OF INCOME TO POVERTY LEVEL VARIABLES

Variable	Label	Type	Source
IncomeToPov_Under50	Persons for whom poverty status was determined with a ratio of income to poverty level below 0.50	Cont	ACS, Census
IncomeToPov_50_99	Persons for whom poverty status was determined with a ratio of income to poverty level between 0.50 and 0.99	Cont	ACS, Census
IncomeToPov_100_124	Persons for whom poverty status was determined with a ratio of income to poverty level between 1.00 and 1.24	Cont	ACS, Census
IncomeToPov_125_149	Persons for whom poverty status was determined with a ratio of income to poverty level between 1.25 and 1.49	Cont	ACS, Census
IncomeToPov_150_184	Persons for whom poverty status was determined with a ratio of income to poverty level between 1.50 and 1.84	Cont	ACS, Census
IncomeToPov_185_199	Persons for whom poverty status was determined with a ratio of income to poverty level between 1.85 and 1.99	Cont	ACS, Census
IncomeToPov_200	Persons for whom poverty status was determined with a ratio of income to poverty level above 2.00	Cont	ACS, Census

6.7 OCCUPATION

Occupation data are reported for the civilian employed population aged 16 and over. Race-specific data are available for these variables except for M_FarmOcc and F_FarmOcc. Refer to Table 6 for the prefixes used to identify each racial and ethnic group.

Table 26
OCCUPATION VARIABLES

Variable	Label	Type	Source
Pop_Emp16	Population 16 years old or older who are employed	Cont	ACS, Census
M_Pop_Emp16	Male population 16 years old or older who are employed	Cont	ACS, Census
M_MgmtOcc	Males in management, professional, and related occupations	Cont	ACS, Census
M_ServOcc	Males in healthcare support, protective service, and related occupations	Cont	ACS, Census
M_SalesOcc	Males in sales, administrative, and related occupations	Cont	ACS, Census
M_FarmOcc	Males in farming, fishing, forestry, and related occupations	Cont	ACS, Census
M_ConsOcc	Males in construction and related occupations	Cont	ACS, Census
M_ProdOcc	Males in production, material, and related occupations	Cont	ACS, Census
M_LabrOcc	Males in machine operation, assembly, and related occupations	Cont	Census
F_Pop_Emp16	Female population 16 years old or older who are employed	Cont	ACS, Census
F_MgmtOcc	Females in management, professional, and related occupations	Cont	ACS, Census
F_ServOcc	Females in healthcare support, protective service, and related occupations	Cont	ACS, Census
F_SalesOcc	Females in sales, administrative, and related occupations	Cont	ACS, Census
F_FarmOcc	Females in farming, fishing, forestry, and related occupations	Cont	ACS, Census
F_ConsOcc	Females in construction and related occupations	Cont	ACS, Census
F_ProdOcc	Females in production, material, and related occupations	Cont	ACS, Census
F_LabrOcc	Females in machine operation, assembly, and related occupations	Cont	Census

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References

Barbieri, M. (2022). *Mortality by socioeconomic category in the United States* [Report]. Society of Actuaries Research Institute. https://www.soa.org/resources/research-reports/2020/us-mort-rate-socioeconomic/

Manson, S., Schroeder, J., Van Riper, D., Knowles, K., Kugler, T., Roberts, F., & Ruggles, S. (2024). *IPUMS National Historical Geographic Information System: Version 19.0* [Dataset]. IPUMS. http://doi.org/10.18128/D050.V19.0

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