

Defining Family for Studies of Health Insurance Coverage

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Summary

In 2020, SHADAC's "Health Insurance Unit," or "HIU," resource was updated to aid researchers in reconciling the differences between the way that a "family" is defined in federal surveys with the way a "family" is defined by most private and public insurance programs.

This brief outlines the impacts of using the SHADAC HIU in analysis—showing how the population distribution of family income changes estimates using three different definitions of family.

INTRODUCTION

Access to health insurance coverage is often tied to family relationships or family income. Eligibility for coverage as a dependent on an employer-sponsored health insurance (ESI) plan, for instance, as well as assessing how income is counted for determining eligibility for public programs, are both dependent on family relationships. Researchers who use publicly available federal survey data, such as the American Community Survey (ACS), to study health policy often estimate respondents' access to insurance; therefore, they often must use a specific definition of "family" in order to produce realistic eligibility estimates. This specificity is especially important in light of the fact that federal surveys define a "family" differently from the way it is defined by most private and public insurance programs. To address this problem, researchers who use these surveys to study access to health insurance must consider alternative definitions of "family" that better align with the definition common across health coverage programs.

To better aid in this research, SHADAC has developed a Health Insurance Unit, or "HIU," to estimate the characteristics and number of individuals who have access to public and private health insurance. The HIU is an economic unit that consists of those members of a household who would likely be eligible as a group for family health insurance coverage or whose resources (i.e., income) would be considered in determining eligibility for public coverage.

This brief demonstrates the impacts of using the SHADAC HIU in analysis. Specifically, it shows how the population distribution of family income changes using three different definitions of family: all members in the same household (Census definition); the definition used by the IPUMS (described below); and the SHADAC HIU (detailed description in [HIU companion brief](#)). Researchers can use this analysis as well as statistical code to help assess whether the SHADAC HIU is suitable for their analysis and what the potential impacts of its use might be.

SHADAC Health Insurance Unit

As noted, the purpose of the SHADAC HIU is to define "family" in a way that is relevant to eligibility for health insurance coverage, whether through an employer or a public program. The SHADAC HIU aims to capture the key components of both public and private eligibility criteria in a single measure, which implies that it only considers criteria that overlap for the determination of eligibility to both types of health insurance. This definition takes direction from how private policies usually define a family unit and the relationships they consider among individuals in the household who could be covered under one private insurance policy (e.g., the policyholder, policyholder's spouse). This is combined with the guidelines to determine eligibility for Medicaid, CHIP, and Qualified Health Insurance through the health insurance marketplace (e.g., modified adjusted gross income, or MAGI, which includes income for the individual, spouse if filing taxes jointly, and others claimed as a tax dependent on a federal tax return). SHADAC leverages the work of the Minnesota Population Center that created family interrelationship measures for the ACS and the Current Population Survey (CPS) to develop an HIU definition that is easily constructed and replicable across those data sources. The SHADAC HIU, while intended to be broadly consistent with the family unit that is relevant for public and private insurance units, can be tailored to the specific criteria used in individual states, for specific programs, or for specific types of analysis.

The SHADAC HIU definition applies the following assignment rules:

- single adults with no children of their own living with them are assigned to their own HIU;
- married couples, regardless of age or sex and including separated couples living in the same household, with no children of their own living with them are assigned to their own HIU;
- single, married, or separated parents, regardless of age or sex, along with their eligible children (i.e., children 18 years of age or younger, who do not have a spouse in the household) are assigned to an HIU;
- eligible children of unmarried parents living in the same household are assigned to the parent with the highest income;
- eligible children with no parent in their household, but who are related to the household reference person, are placed in the first HIU in the household; and
- eligible children with no parent in the household and who are not related to the household reference person are placed in their own HIU.

Impacts of using the SHADAC HIU

Selecting a specific “family” definition can have a significant impact on the findings of any analysis. One way to illustrate the importance of this choice is to perform the same analysis using various definitions and see how the results differ.

The analysis described below used 2021 ACS data to estimate the distribution of family income (based on health policy-relevant Federal Poverty Guidelines [FPG] thresholds) using three increasingly specific ways to define family:

- 1. Household – all members in the same household**
- 2. IPUMS Family – all related members of a household**
- 3. SHADAC HIU – all related members of a household, excluding nondependent relatives**

These three definition of family are similar, but have notable differences. All three definitions are limited to individuals who reside in the household. The SHADAC HIU defines family the most narrowly and excludes nondependent relatives such as grandparents, adult siblings, aunts/uncles, etc. who may be household members, but are unlikely to be considered as part of the “family unit” as defined for the purposes of determining eligibility for health insurance. The IPUMS definition of family is slightly more expansive and defines all members of the household who are related using relationship identifiers to define family.

Table 1 shows that the SHADAC HIU yields higher proportions of the population in the lower income group (0-138% FPG). The SHADAC HIU estimates that 24.7% of the overall population have family incomes among the lower income group (0-138% FPG). This estimate is 8.2 percentage points (PP) higher than the estimate calculated using the IPUMS Family definition (calculated at 16.5%) and more than 9 PP higher than the estimate calculated using the Household definition (calculated at 15.3%). In terms of weighted counts, the rates translate into an estimated 80.1 million people in the lower income group using the SHADAC HIU; a number which drops by an estimated 26.6 and 30.7 million people, respectively, when using the IPUMS or Household definitions.

Table 1. Impacts of using alternative “family” definitions to estimate income distribution in the United States, 2021 ACS

Income category	Rates			Income category	Weighted Counts (in Thousands)		
	SHADAC HIU	PP difference from SHADAC HIU			SHADAC HIU	Difference from SHADAC HIU	
		IPUMS Family	Household			IPUMS Family	Household
0-138% FPG	24.72%	-8.204 *	-9.461 *	0-138% FPG	80,109	-26,589 *	-30,661 *
139-250%FPG	18.13%	-0.620 *	-0.753 *	139-250%FPG	58,744	-2,009 *	-2,443 *
251-400% FPG	19.04%	2.302 *	2.566 *	251-400% FPG	61,696	7,458 *	8,316 *
401+% FPG	38.12%	6.523 *	7.649 *	401+% FPG	123,529	21,140 *	24,788 *

Source: SHADAC analysis of the 2021 American Community Survey Public Use Microdata Sample (PUMS) File.
* denotes a statistically significant difference (p<0.05)

Table 2 shows the implications of using the SHADAC HIU or IPUMS “family” definition across states to estimate the share of people with incomes below 138% FPG for different age groups. Similar to the results at the national level, we find that relying on the IPUMS definition of family leads to a smaller share of people in the lower income group relative to estimates based on the SHADAC HIU. The difference between the share of low-income people using both family definitions ranges from 4.3 PP in North Dakota to 11.6 PP in Hawaii. When narrowing this analysis to nonelderly adults, we estimate the smallest difference at 5.8 PP in the District of Columbia and the largest at 13.3 PP in Hawaii. However, these differences decline if we focus on children, where the smallest difference is 2.1 PP in New Hampshire and the largest is 9.5 PP in Hawaii.

Table 2. Impacts of using alternative “family” definitions—Share of Individuals below 138% FPG, by age and state, 2021 ACS

State	Total Population		Non-elderly Adults		Children	
	SHADAC HIU	SHADAC HIU vs IPUMS Family (PP difference)	SHADAC HIU	SHADAC HIU vs IPUMS Family (PP difference)	SHADAC HIU	SHADAC HIU vs IPUMS Family (PP difference)
United States	24.7%	-8.2 *	24.6%	-10.3 *	26.7%	-4.3 *
Alabama	30.1%	-8.4 *	30.1%	-10.8 *	34.3%	-4.8 *
Alaska	26.8%	-7.9 *	25.6%	-9.4 *	31.7%	-5.7
Arizona	24.9%	-8.1 *	24.8%	-10.3 *	29.1%	-5.2 *
Arkansas	29.6%	-7.4 *	29.0%	-9.9 *	33.6%	-3.8 *
California	26.7%	-11.1 *	26.3%	-12.9 *	27.3%	-6.3 *
Colorado	18.9%	-6.6 *	19.1%	-8.2 *	19.5%	-3.4 *
Connecticut	20.3%	-7.8 *	21.4%	-10.6 *	19.5%	-2.9 *
Delaware	23.0%	-8.0 *	24.4%	-10.7 *	25.3%	-3.4
D.C.	23.2%	-5.3 *	20.5%	-5.8 *	30.6%	-3.3
Florida	26.6%	-9.1 *	26.4%	-11.2 *	29.0%	-4.9 *
Georgia	27.0%	-8.9 *	26.4%	-10.9 *	30.5%	-5.2 *
Hawaii	26.8%	-11.6 *	26.6%	-13.3 *	28.5%	-9.5 *
Idaho	22.1%	-7.0 *	22.4%	-9.3 *	23.1%	-3.6
Illinois	23.5%	-8.3 *	23.8%	-10.7 *	24.8%	-4.1 *
Indiana	22.8%	-7.2 *	22.9%	-9.3 *	25.0%	-3.5 *
Iowa	19.9%	-5.3 *	20.4%	-7.4 *	20.8%	-2.6
Kansas	22.0%	-6.4 *	22.6%	-8.3 *	22.7%	-4.1 *
Kentucky	29.2%	-7.6 *	29.1%	-9.9 *	32.5%	-3.9 *
Louisiana	33.2%	-8.6 *	33.2%	-11.5 *	36.5%	-4.0 *
Maine	20.2%	-5.4 *	20.7%	-7.1 *	21.1%	-2.8
Maryland	21.3%	-8.5 *	21.5%	-10.5 *	22.5%	-4.6 *
Massachusetts	20.0%	-7.4 *	19.8%	-9.0 *	19.8%	-4.1 *
Michigan	24.7%	-7.6 *	25.3%	-10.1 *	28.0%	-4.0 *
Minnesota	17.1%	-5.8 *	17.6%	-7.8 *	16.4%	-3.1 *
Mississippi	34.4%	-8.3 *	33.8%	-11.1 *	39.5%	-4.2 *
Missouri	23.3%	-6.7 *	23.6%	-9.2 *	24.7%	-3.1 *
Montana	21.7%	-6.2 *	22.3%	-8.3 *	23.5%	-3.2
Nebraska	19.6%	-5.4 *	19.7%	-7.4 *	20.5%	-3.3
Nevada	26.9%	-8.4 *	26.5%	-10.4 *	30.2%	-4.0 *
New Hampshire	15.6%	-6.9 *	16.0%	-9.1 *	13.7%	-2.1
New Jersey	21.7%	-8.9 *	21.9%	-11.4 *	22.2%	-3.8 *
New Mexico	32.7%	-8.1 *	33.6%	-10.6 *	37.3%	-4.6 *
New York	26.3%	-8.9 *	25.8%	-11.0 *	28.2%	-4.2 *
North Carolina	25.7%	-7.7 *	25.4%	-9.7 *	28.6%	-4.1 *

State	Total Population		Non-elderly Adults		Children	
	SHADAC HIU	SHADAC HIU vs IPUMS Family (PP difference)	SHADAC HIU	SHADAC HIU vs IPUMS Family (PP difference)	SHADAC HIU	SHADAC HIU vs IPUMS Family (PP difference)
North Dakota	17.6%	-4.3 *	17.5%	-5.9 *	17.3%	-2.5
Ohio	23.9%	-7.2 *	24.0%	-9.6 *	27.3%	-3.7 *
Oklahoma	28.0%	-7.4 *	27.6%	-9.5 *	32.4%	-4.8 *
Oregon	22.8%	-7.1 *	23.8%	-9.2 *	23.6%	-3.9 *
Pennsylvania	22.3%	-7.3 *	22.4%	-9.8 *	24.7%	-3.3 *
Rhode Island	22.0%	-7.8 *	22.2%	-9.8 *	21.4%	-3.5
South Carolina	27.0%	-7.8 *	27.1%	-10.2 *	30.6%	-3.9 *
South Dakota	20.3%	-4.8 *	19.7%	-6.5 *	22.9%	-2.4
Tennessee	26.4%	-7.5 *	26.1%	-9.6 *	30.0%	-4.3 *
Texas	27.4%	-8.5 *	26.2%	-10.5 *	30.4%	-4.6 *
Utah	18.3%	-6.9 *	19.8%	-9.0 *	15.8%	-3.7 *
Vermont	18.5%	-6.0 *	20.1%	-8.0 *	16.6%	-3.9
Virginia	20.8%	-7.6 *	21.4%	-9.7 *	20.7%	-3.6 *
Washington	19.5%	-7.0 *	19.9%	-8.8 *	20.0%	-3.4 *
West Virginia	30.4%	-7.8 *	32.2%	-10.7 *	32.8%	-3.6
Wisconsin	19.6%	-5.7 *	19.8%	-7.8 *	21.1%	-2.5 *
Wyoming	21.3%	-5.6 *	22.4%	-7.7 *	23.9%	-3.5

Source: SHADAC analysis of the 2021 American Community Survey Public Use Microdata Sample (PUMS) File.

* denotes a statistically significant difference (p<0.05)

DISCUSSION

Simple decisions made by researchers when analyzing health insurance coverage can lead to substantially different conclusions. This policy brief highlights the importance of defining the family unit and the advantages and implications of using the SHADAC HIU. Traditional definitions of these family units tend to underestimate the number of low-income individuals, and we encourage researchers and analysts to implement the SHADAC HIU in any analyses examining private or public coverage eligibility.

As this policy brief has demonstrated, estimates of the number of people in poverty based on the SHADAC HIU as compared to other family units leads to substantially different conclusions, especially among non-elderly adults. In fact, under the proposed SHADAC HIU definition, we estimate nearly 27 million more people in poverty than under the IPUMS Family unit. We also find substantially different estimates across states. The policy implications of estimates varying in the millions are great for both states and the federal government.

Using the SHADAC HIU

The easiest way to use the SHADAC HIU is through the interactive, user-friendly State Health Compare website (<https://statehealthcompare.shadac.org>). This tool offers estimates of insurance coverage and other outcomes using the SHADAC HIU definition to estimate some variables (e.g., poverty), both nationally and across states.

If the scope of analysis requires the researcher to go beyond what they can find at SHADAC's State Health Compare, they could access microdata containing the SHADAC HIU family definition through IPUMS. The Institute for Social Research and Data Innovation (ISRDI), along with SHADAC, implements this in IPUMS data files of the ACS and CPS. IPUMS collects, preserves, and harmonizes these microdata and provides easy access to these data with enhanced documentation. SHADAC works with ISRDI to include HIU variables for the ACS and the CPS in IPUMS that define family using the SHADAC HIU and calculate income using that family definition. Data and services are available free of charge. IPUMS is a center within ISRDI at the University of Minnesota.

Alternatively, and recommended only for cases when the specific research scope requires the analyst to adjust the definition criteria described here, code in STATA is available directly from the SHADAC website for two data sources: the ACS and CPS. We add, at the end of the code, hard assignments of the SHADAC HIU for specific years due to having very particular cases that do not conform to the general guidelines established by the SHADAC HIU.