Defining Family for Studies of Health Insurance Coverage

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Summary

In 2020, SHADAC updated the SHADAC "Health Insurance Unit," or "HIU," 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—specifically, analysis showing how the population distribution of family income changes using three different definitions of family. Researchers can use this brief to assess whether the SHADAC HIU is suitable for their analysis and what the potential impacts of its use might be.

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, 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 (described in detail in a 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 HIU

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 by the Minnesota Population Center that constructed 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 2019 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, but 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 25.7% of the overall population have family incomes among the lower income group (0-138% FPG). This estimate is almost 10 percentage points (PP) higher than the estimate using the Household definition (15.8%).This difference shrinks when comparing to the estimates produced using IPUMS "family" definition, falling to 8.6 PP (using the IPUMS definition, the estimate was calculated at 17.2%). In terms of weighted counts, the rates translate into an estimated 82.4 million people in the lower income group using the SHADAC HIU; a number which drops by an estimated 27.4 and 32.0 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, 2019 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	25.75%	-8.550 *	-9.989 *	**0-138% FPG**	82,403	-27,365 *	-31,971 *
139-250%FPG	19.17%	-0.391 *	-0.524 *	**139-250%FPG**	61,348	-1,249 *	-1,675 *
251-400% FPG	18.82%	2.938 *	3.345 *	**251-400% FPG**	60,242	9,405 *	10,705 *
401+% FPG	36.26%	6.002 *	7.168 *	**401+% FPG**	116,069	19,209 *	22,941 *

Source: SHADAC analysis of the 2019 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 4.6 PP in Wyoming to 11.2 PP in California. When narrowing this analysis to nonelderly adults, we estimate the smallest difference of 6.1 PP in North Dakota and the largest at 13.1 PP in California. However, these differences decline if we focus on children, where the smallest difference is 1.5 PP in Vermont and the largest is 7.3 PP in Nevada.

Table 2. Impacts of using alternative "family" definitions—individuals below 138% FPG, by age and state, 2019 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	**25.7%**	**-8.6**	*	**25.5%**	**-10.8**	*	**28.6%**	**-4.6**	*
Alabama	30.7%	-8.6	*	30.9%	-11.4	*	34.2%	-4.3	*
Alaska	26.9%	-8.0	*	27.0%	-11.0	*	27.0%	-3.7	
Arizona	27.3%	-8.8	*	27.5%	-11.1	*	32.3%	-5.7	*
Arkansas	31.9%	-8.2	*	31.8%	-10.6	*	37.3%	-5.1	*
California	27.6%	-11.2	*	26.8%	-13.1	*	29.2%	-6.3	*
Colorado	19.3%	-6.4	*	19.3%	-7.9	*	20.6%	-3.7	*
Connecticut	22.0%	-8.2	*	23.2%	-11.2	*	23.0%	-3.3	*
Delaware	23.4%	-9.0	*	24.5%	-12.3	*	27.2%	-4.4	
D.C.	24.2%	-6.7	*	21.9%	-7.0	*	31.7%	-5.8	
Florida	28.4%	-10.1	*	28.3%	-12.5	*	31.2%	-5.0	*
Georgia	28.5%	-9.0	*	27.4%	-11.2	*	32.6%	-4.8	*
Hawaii	25.0%	-10.4	*	23.8%	-11.7	*	27.4%	-6.8	*
Idaho	23.3%	-6.8	*	24.2%	-8.8	*	25.0%	-4.5	*
Illinois	24.0%	-8.5	*	24.3%	-10.8	*	26.4%	-4.5	*
Indiana	24.8%	-7.3	*	25.0%	-9.7	*	28.9%	-4.3	*
Iowa	20.9%	-5.7	*	21.5%	-7.7	*	22.3%	-3.3	*
Kansas	22.6%	-6.3	*	23.0%	-8.4	*	25.9%	-3.6	*
Kentucky	29.5%	-7.0	*	29.5%	-9.1	*	32.9%	-3.4	*
Louisiana	34.2%	-9.2	*	33.8%	-11.9	*	39.0%	-5.1	*
Maine	21.3%	-6.2	*	22.1%	-8.0	*	22.4%	-3.0	
Maryland	21.7%	-9.2	*	22.0%	-11.6	*	22.7%	-5.0	*
Massachusetts	19.9%	-7.6	*	20.0%	-9.6	*	19.7%	-3.5	*
Michigan	25.7%	-8.1	*	26.9%	-11.2	*	28.5%	-3.8	*
Minnesota	17.7%	-5.7	*	17.8%	-7.8	*	18.4%	-2.6	
Mississippi	37.0%	-9.2	*	36.1%	-12.2	*	43.1%	-4.8	*
Missouri	25.1%	-6.8	*	25.3%	-9.1	*	28.3%	-3.6	*
Montana	24.1%	-5.8	*	24.5%	-8.1	*	27.0%	-2.2	
Nebraska	19.6%	-4.7	*	19.3%	-6.7	*	20.6%	-1.5	
Nevada	27.0%	-9.8	*	26.1%	-11.3	*	31.4%	-7.3	*
New Hampshire	17.0%	-6.3	*	17.9%	-8.3	*	16.4%	-3.0	
New Jersey	21.7%	-8.9	*	21.7%	-11.3	*	22.7%	-4.1	*
New Mexico	33.4%	-9.5	*	34.1%	-12.6	*	36.4%	-4.4	
New York	25.8%	-8.8	*	24.8%	-10.8	*	28.7%	-4.5	*
North Carolina	27.5%	-8.0	*	27.1%	-10.2	*	31.5%	-3.9	*
North Dakota	19.0%	-4.7	*	20.0%	-6.1	*	18.3%	-3.3	
Ohio	24.8%	-7.1	*	25.0%	-9.4	*	28.9%	-3.6	*
Oklahoma	28.6%	-7.5	*	28.8%	-9.8	*	32.3%	-4.1	*
Oregon	22.7%	-7.6	*	23.7%	-9.6	*	23.8%	-4.7	*

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)
Pennsylvania	23.5%	-7.4 *	23.8%	-9.7 *	26.9%	-3.8 *
Rhode Island	22.8%	-8.8 *	23.8%	-11.3 *	21.6%	-3.9
South Carolina	28.4%	-8.6 *	28.4%	-11.3 *	33.2%	-4.6 *
South Dakota	19.5%	-4.7 *	18.9%	-6.3 *	23.7%	-2.9
Tennessee	27.5%	-7.9 *	27.2%	-10.2 *	32.0%	-4.3 *
Texas	29.4%	-9.6 *	27.9%	-11.6 *	33.4%	-5.3 *
Utah	20.4%	-6.7 *	21.7%	-9.2 *	19.7%	-3.0 *
Vermont	19.8%	-5.6 *	21.9%	-7.9 *	19.7%	-1.5
Virginia	21.9%	-8.1 *	22.0%	-10.2 *	22.9%	-3.6 *
Washington	19.8%	-7.2 *	19.9%	-8.9 *	21.3%	-4.4 *
West Virginia	30.4%	-8.1 *	32.0%	-10.3 *	34.6%	-6.0 *
Wisconsin	19.7%	-5.8 *	19.9%	-7.9 *	21.5%	-2.5
Wyoming	18.9%	-4.6 *	19.6%	-6.6 *	17.9%	-2.1

Source: SHADAC analysis of the 2019 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 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, easily accessible SHADAC State Health Compare online table generator (http://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. Microdata containing the SHADAC HIU family definition are available through IPUMS USA and IPUMS CPS. The Institute for Social Research and Data Innovation (ISRDI) collaborates with SHADAC to include HIU variables in ISRDI's IPUMS data files of the ACS and CPS. IPUMS is a center within ISRDI that collects, preserves and harmonizes these microdata and provides easy access to these data with enhanced documentation. Data and services are available free of charge.

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.