

Revised CPS Estimates Show less High Burden Medical Spending

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SUMMARY

Health care costs in the United States are continuing to rise at unprecedented levels, and with high out-of-pocket expenses such as deductibles, copayments, and coinsurance adding to concerns about affordability of care even with coverage, accurate estimates of financial burden related to medical spending for American individuals and families have become increasingly important. Recently, the U.S. Census Bureau has changed the way medical out-of-pocket expenditures (MOOP) are processed in the Current Population Survey Annual Social and Economic Supplement (CPS ASEC). These changes have important implications for tracking MOOP and related measures of high burden medical spending (spending more than 10 percent of income on premiums, copays, coinsurance, and other cost sharing) over time.

In this brief, we examine how use of the new processing system in the CPS ASEC decreased the percent of individuals who are in families (also referred to here as “Health Insurance Units” or “HIUs”) with a high medical cost burden from 20.7 percent to 18.9 percent at the national level. This processing system change also had significant impacts at the state level. Six states saw statistically significant decreases in high medical cost burden and substantial changes to states’ ranking order from highest to lowest medical cost burden were also revealed, as twelve states shifted their rank by over ten spots. Florida, for example, experienced a dramatic shift in rank from 14th to 34th among states in high burden medical spending when using the new processing system. Scenarios such as this highlight how important it is for analysts and policymakers to understand that apparent improvements in reducing high burden medical spending are the result of technical processing changes and not the direct impact of policy or the economy.

Introduction

Numerous recent studies have highlighted the growing problem of affordability of health care, even among families with insurance coverage.^{1,2} Since 2010, the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) has been collecting information about medical out-of-pocket spending (MOOP). This information, combined with income, can be used to estimate the share of families facing “high burden” medical spending, defined here as “spending more than 10 percent of income on premiums and cost sharing (e.g., copays, coinsurance, etc.)” SHADAC posts these estimates by state, age, and coverage type on our interactive web tool, [State Health Compare](#).

HIGH BURDEN MEDICAL SPENDING High burden medical spending is defined as individuals who are in families where out-of-pocket spending on health care, including premiums, accounted for more than 10 percent of annual income for the civilian non-institutionalized population.

The changes made to the CPS processing system in 2019 by the U.S. Census Bureau have affected the way that medical out-of-pocket expenditures (MOOP) are processed, which has important implications for tracking high burden medical spending over time. In this brief, we provide an overview of the changes that the Census Bureau has made to data processing for the CPS related to medical spending, and then present estimates of the impact by income, coverage type, and race at the national level and across states. We conclude with a discussion of both the policy and research implications of our findings.

Medical Expenditure Questions in the CPS

The CPS ASEC collects information about out-of-pocket medical expenditures from a three question series. Question 1 is asked of policyholders, and Questions 2 and 3 are repeated for each member of the household.

QUESTION 1 Last year, how much did you pay out-of-pocket for ALL health insurance premiums (covering yourself/himself) or others in the household? Include both comprehensive and supplemental plans (such as vision and dental insurance). Do not include information for Medicare part B premiums, if relevant.

QUESTION 2 Last year, how much was paid out-of-pocket for (your/name's) OWN medical care, such as copays for doctor and dentist visits, diagnostic tests, prescription medicine, glasses and contacts, and medical supplies? Include any amount paid out-of-pocket on your behalf by anyone in this household.

QUESTION 3 Last year, how much was paid out-of-pocket for your non-prescription healthcare products such as vitamins, allergy, and cold medicine, pain relievers, quit smoking aids, AND anything else not yet reported? Include any amount paid out-of-pocket on your behalf by anyone in this household.

Changes to the CPS Processing System

The U.S. Census Bureau introduced a redesign of the CPS ASEC questionnaire in 2014 and, since then, has also updated the processing system for extracting, imputing, and weighting data collected from the survey. The most important change with regard to estimating high burden medical spending is how cases with missing data are imputed. Over 20 percent of cases in 2017 required medical expenditure information to be imputed, so changes to this process impact a large number of records.³

Prior to 2019, the legacy processing system for the CPS imputed health insurance and medical expenditure information separately for individuals within the same family. The updated processing system improves upon this approach by implementing an imputation process that takes into account the fact that families often share insurance coverage and expenses. Under the new system, missing information is now imputed jointly for members of the same family—more specifically, the “health insurance unit.” The health insurance unit (HIU) defines family based on who is likely considered a “family unit” in determining eligibility for private or public coverage.⁴

In addition, the updated processing system imputes both premium and non-premium expenses jointly, which is important because premium costs are related to how much is spent on non-premium costs such as deductibles, copays, and coinsurance. Finally, the updated processing system takes into consideration additional characteristics, such as income as a share of the poverty level and whether consumers receive subsidies for coverage they purchase directly.

In addition to the previously discussed updates, the Census Bureau also created a new variable (PHIP_VAL2) that addresses some logical inconsistencies in respondents’ reporting of premium expenses and subsidies. For example, some respondents report having insurance coverage that is either not subsidized or only partially subsidized, but also report having zero premium expenses, responses which cannot be simultaneously true. In these cases, using the updated processing system, the Census Bureau will instead impute a non-zero value for premium expenses and researchers can choose whether to use this new variable or use the original “PHIP_VAL” variable when analyzing medical expenditures. For the analysis presented in the following section, we do not incorporate the new “PHIP_VAL2” variable because we wanted to make data comparisons between the legacy and revised processing system files as “apples to apples” as possible.

National Results

To estimate the impact of the changes on medical cost burden, we compared results using the 2018 CPS ASEC official production file (which uses the old processing system; data year 2017) versus the 2018 CPS ASEC bridge file (which uses the new processing system; data year 2017). Table 1 shows the differences between the two files for estimates of high burden medical spending by income as a share of federal poverty guidelines (FPG), coverage type, and race/ethnicity. Overall, the share of the total population with high medical cost burden decreases from 20.7 percent to 18.9 percent, a difference that is statistically significant. As the table demonstrates, the impact of processing system changes from using the legacy file to the bridge file trends nearly the same across all demographic groups (decreasing the share of high burden spending), although not all differences are statistically significant. The largest impacts can be seen for those with incomes below 200% FPG, and no statistically significant impacts were found for those with incomes above 400% FPG. As a result, the differential in high burden spending between lower- and higher- income families is narrower than has been previously estimated.

Calculating the impact between files by coverage type reveals different trends. The revised processing system results in lower shares of high burden spending among those with employer/military coverage and Medicaid. There were no statistically significant impacts among those with individual or Medicare coverage, and those with individual coverage continue to have rates of high burden spending nearly double those of people with employer-based coverage and more than triple that of Medicaid.

All racial and ethnic groups saw a statistically significant decline in high burden spending as a result of applying the revised processing system (Table 1). However, the magnitude of that decline was smallest among Whites, and as a result the gap in spending between Whites and other racial and ethnic groups widened. For instance, the difference between high burden medical spending among Asians, who have the lowest rates at 15.9 percent, and Whites (20.1 percent) increased from 3.2 to 4.2 percentage points when shifting from the legacy to the revised processing system.

Table 1. Estimates of High Burden Spending, CPS 2017 Legacy and Revised Files

Characteristic	Legacy File	Bridge File (Revised)	Percentage Point Difference
Total	20.7%	18.9%	1.8% *
Sex			
Female	21.4%	19.5%	1.9% *
Male	19.9%	18.2%	1.7% *
Race/Ethnicity			
African American	20.3%	17.9%	2.4% *
Asian	18.1%	15.9%	2.3% *
Hispanic/Latino	19.3%	16.8%	2.5% *
Other Race	20.8%	17.5%	3.3% *
White	21.4%	20.1%	1.3% *
Coverage Type			
Employer/Military	20.3%	18.4%	1.8% *
Individual	39.1%	37.2%	1.9%
Medicaid	13.6%	11.5%	2.1% *
Medicare	24.8%	24.1%	0.7%
Income			
Less than 100% of FPG	31.1%	25.4%	5.8% *
100% - 199% of FPG	27.2%	23.1%	4.1% *
200% - 299% of FPG	25.4%	23.4%	2.1% *
300% - 399% of FPG	22.2%	20.3%	1.9% *
Greater than 400% of FPG	12.6%	13.1%	-0.5%

Notes: Statistically significant differences between files is indicated by * (95% confidence level). Family is defined as a Health Insurance Unit (HIU), based on individuals who would likely be considered a family unit in determining eligibility for either private or public coverage. The new variable created by census (PHIP_VAL2) to address some logical inconsistencies in the reporting of premium expenses and subsidies is not used here in order to make the comparison between the legacy and bridge files as "apples to apples" as possible.

Source: SHADAC analysis of U.S. Census Bureau, 2018 CPS Annual Social and Economic Supplement Legacy and Bridge Files.

State Results

Table 2 on the following page, shows the impact of the revised processing system on the share of people reporting high burden medical spending by state. Statistically significant differences between the legacy and revised system were shown in six states. As was the case nationally, all statistically significant changes resulted in reductions in the estimated share of people facing high burden medical spending and ranged in magnitude from 1.9 percentage points in New York to 5.0 percentage points in Vermont.

There was also a dramatic impact between processing systems on the overall ranking of states with regard to this measure. For example, Florida shifted in ranking from 14th when using the legacy file to 34th when using the bridge file (ranks with lower numbers indicate more high burden spending), and Vermont moved from 11th to 36th.

Table 2. Estimates of High Burden Spending by State, CPS 2017 Legacy and Revised Files

State	Legacy File		Bridge (Revised) File		Percentage Point Difference	Change in Rank
	Estimate	Rank	Estimate	Rank		
Alabama	19.2%	42	19.0%	35	-0.3%	7
Alaska	13.9%	49	13.1%	50	-0.8%	-1
Arizona	21.0%	30	19.2%	33	-1.8%	-3
Arkansas	24.9%	6	22.3%	9	-2.6%	-3
California	16.3%	46	14.3%	47	-2.0% *	-1
Colorado	25.1%	5	20.8%	18	-4.3%	-13
Connecticut	20.8%	33	17.7%	40	-3.1%	-7
Delaware	19.7%	41	21.5%	14	1.8%	27
Dist. of Columbia	12.2%	51	11.8%	51	-0.4%	0
Florida	23.2%	14	19.2%	34	-4.0% *	-20
Georgia	20.4%	37	20.8%	16	0.4%	21
Hawaii	14.3%	48	13.7%	48	-0.7%	0
Idaho	24.4%	8	23.2%	5	-1.2%	3
Illinois	23.2%	13	22.0%	10	-1.2%	3
Indiana	24.4%	7	21.8%	11	-2.6%	-4
Iowa	24.4%	9	20.7%	19	-3.7%	-10
Kansas	20.5%	36	20.1%	27	-0.5%	9
Kentucky	22.3%	21	20.7%	20	-1.6%	1
Louisiana	19.8%	38	20.8%	17	0.9%	21
Maine	18.7%	43	16.4%	44	-2.3%	-1
Maryland	20.6%	35	16.6%	43	-4.0% *	-8
Massachusetts	21.9%	22	20.3%	23	-1.6%	-1
Michigan	19.8%	39	18.3%	38	-1.6%	1
Minnesota	20.8%	32	18.0%	39	-2.8%	-7
Mississippi	22.3%	20	21.6%	13	-0.7%	7
Missouri	20.7%	34	21.7%	12	1.0%	22
Montana	20.9%	31	19.5%	31	-1.4%	0
Nebraska	29.7%	1	25.8%	2	-3.8% *	-1
Nevada	22.4%	18	20.0%	28	-2.4%	-10
New Hampshire	22.5%	17	20.3%	24	-2.2%	-7
New Jersey	21.5%	25	20.3%	22	-1.3%	3
New Mexico	13.8%	50	14.5%	46	0.7%	4
New York	15.4%	47	13.6%	49	-1.9% *	-2
North Carolina	24.3%	10	22.6%	8	-1.7%	2
North Dakota	21.2%	29	20.2%	26	-1.0%	3
Ohio	21.9%	23	19.8%	29	-2.0%	-6
Oklahoma	22.8%	15	21.4%	15	-1.4%	0
Oregon	23.4%	12	19.6%	30	-3.8%	-18
Pennsylvania	21.3%	27	20.3%	25	-1.1%	2
Rhode Island	16.9%	45	15.1%	45	-1.8%	0
South Carolina	22.4%	19	20.5%	21	-1.8%	-2
South Dakota	29.2%	2	24.7%	3	-4.5%	-1
Tennessee	21.5%	26	23.1%	6	1.6%	20
Texas	21.2%	28	19.5%	32	-1.7%	-4
Utah	25.4%	4	24.1%	4	-1.3%	0
Vermont	23.7%	11	18.7%	36	-5.0% *	-25
Virginia	19.8%	40	17.1%	41	-2.7%	-1
Washington	17.3%	44	16.9%	42	-0.5%	2
West Virginia	22.5%	16	22.7%	7	0.2%	9
Wisconsin	21.6%	24	18.6%	37	-3.1%	-13
Wyoming	26.7%	3	26.8%	1	0.1%	2
United States	20.7%	NA	18.9%	NA	-1.8% *	NA

Notes: Statistically significant differences between files is indicated by * (95% confidence level). Family is defined as a Health Insurance Unit (HIU), based on individuals who would likely be considered a family unit in determining eligibility for either private or public coverage. The new variable created by census (PHIP_VAL2) to address some logical inconsistencies in the reporting of premium expenses and subsidies is not used here in order to make the comparison between the legacy and bridge files as "apples to apples" as possible.

Source: SHADAC analysis of U.S. Census Bureau, 2018 CPS Annual Social and Economic Supplement Legacy and Bridge Files.

Policy Implications

Accurate estimates of financial burden have become increasingly important as high out-of-pocket expenses such as deductibles, copayments, and coinsurance add to concerns about affordability of care even among individuals with health insurance coverage. The CPS is a unique data source in that it provides information on high burden spending for key subpopulations (by coverage, income, race/ethnicity, etc.) and supports production of estimates at the state level.

The CPS will continue to be a critical source of information about health care costs, but it is also important that analysts and policymakers understand the impacts of the new processing system and the related limitations of comparing new data to prior years. As our results demonstrate, the changes made with the revised processing system indicate that levels of high burden spending are, overall, lower than previously estimated. It is critical that this apparent shift is recognized for what it is: the impact of technical changes in data processing and not the result of changes in policy or economic conditions. Moving forward, new data from the CPS on medical out-of-pocket spending can be compared back to 2017, but not to any earlier time periods.

The revised estimates also shift some of the conclusions related to differences in high burden spending for key subpopulations and across states. The gap in high burden spending by income, while still substantial, is narrower than previously estimated. States also rank quite differently when using the revised data; for instance, with states like Florida and Vermont, which according to previous estimates have comparatively large shares of their population facing high burden spending, shifting dramatically in overall ranking. As with the impact of changes shown between income-level demographic groups, it is important to understand that this new picture is the result of technical changes, not specific state policies or other causal factors.

CONCLUSION

Technical changes to CPS ASEC data processing show overall lower levels of medical high burden medical spending than have been previously estimated. Impacts of these changes (and magnitude thereof) vary by state, and resultantly affect how states compare to one another in ranking for this measure. Additionally, overall decreases in high burden medical spending found as a result of the new processing system are also shown to be larger among lower-income individuals than higher-income individuals, narrowing the gap in financial burden.

It will be very important to continue to monitor high burden spending using the CPS over time. Analysts may also want to consider exploring other data related to affordability, such as estimates from employer surveys like the Medical Expenditure Panel Survey insurance Component (MEPS-IC), information about premiums and overall market health from health care marketplaces, state and federal health care spending estimates, etc., that can be used to understand trends over a longer timeframe.

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