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MEASURING THE VALUE OF HEALTH INSURANCE FOR INDIVIDUALS AND FAMILIES

Report for NASEM Panel on an Integrated System of U.S. Household Income, Wealth, and Consumption Data and Statistics to Inform Policy and Research.

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Abstract

This report evaluates the key measurement issues in estimating the value for individuals and families of health insurance provided by employers or the government, including implications for both a resource transfer perspective on valuing in-kind goods as well as a more normative utility-based approach. There is clearly agreement that it is important to measure and add the value of health insurance in assessing economic well-being, for measuring its distribution and trends and whether individuals are in poverty, for its use in rules determining further resource allocation, and for assessing how it is influenced by policy and societal factors.

The transfer perspective has tended for several decades to use the "ex ante" value of providing health insurance at government cost or market value if participants were to obtain the insurance on their own (Smeeding, 1982). The utility perspective also uses an ex-ante value but has undergone much change in measurement approaches. The literature has only very recently used a welfare-analysis justified framework, whereas earlier methods used a set of somewhat arbitrary decisions (such as placing caps on the value of health insurance) to account for possible undervaluing of health insurance relative to cost. Our paper surveys the different methods taken by the existing literature within these two broad approaches. We discuss the aims for which a value of non-cash benefits is sought and we end with a discussion of implications of the different methods and our recommendations of key questions to be asked when selecting a method, using data from the Survey of Income and Program Participation (SIPP). A major question that arises in taking these methods to survey data is the large and growing nature of undercounts of insurance, especially the Medicaid undercount which may have doubled during the pandemic ((Hest and Blewett, 2022)).

Our take-away from the consideration of the literature is that both the transfer method and the utility method have their place, but that the transfer method fits most use cases that have been presented in the literature. We recommend that for questions that need a normative value, the Finkelstein et al (2019) justification for arriving a fraction of Medicaid costs would be instructive when used in place of the ad hoc method of caps that some measures have used in the past. However, the utility approach also implies that uncompensated care values should be added to the uninsured, as those funds represent a

transfer on behalf of that care. Our empirical assessment using the Survey of Income and Program Participation (SIPP) before and after the start of the COVID-19 pandemic illustrates how adding health insurance changes the distribution of economic well-being. In a nutshell, we find that adding health insurance reduced multiple measures of inequality used for valuing health insurance, but that the reduction is about x% larger when using the transfer approach than using a utility approach where we do not apportion uncompensated care to any individuals, and only adjust Medicaid rather than Medicare. When we adjust both Medicaid and Medicare, we find.. When we adjust only Medicaid and add uncopmensated care, we find.. Thus, as expect, this illustrative exercise shows that the effect of health insurance on income distributions dependents on the method used. SOME WORDS ON PRE VS DURING COVID. Future research advances will benefit from refining exact methods, and more clearly delineating appropriate use cases each of the approaches to incorporating health insurance into income measurement.

1 Introduction

Many researchers and organizations have invested large amounts of effort in measuring economic well-being, how it is distributed across society and subgroups, how it is taxed and redistributed, what level defines poverty, how well-being changes over time and across generations, and very importantly, how government policies affect it. Health care spending is a large and growing fraction of the economy. In 2021 the US spent $4.3 billion a year, or 18.3% of GDP, on health care expenditures (CMS, 2022); 90% if this is not paid through direct out-of-pocket expenses, as health insurance is provided often through near-universal government provision to certain age groups (Medicare for ages 65 and older), means-tested public subsidies (Medicaid and most ACA Marketplace coverage) or as a fringe benefit to an employment contract.

Despite a sizeable literature on ways to assign the value of health insurance to economic well-being metrics, we lack consensus. Instead, the literature has suggested several methods based on very different views on how to address fungibility and other complexities of in-kind benefits. Suffice it to say, each method essentially answers a different question. In this chapter, we list the measurement issues in each approach, and illustrate with a sample data exercise, to better understand implications for the different purposes for which economic well-being (hereto described as simply "income") measurement matters. Our illustrative data set is chosen to cover the period before and after the pandemic, so we can comment on how the measurement choices affect the way income distributional characteristics have evolved in the most recent years. We end with lessons from the literature for use cases incorporating the value of health insurance.

There are two overarching ways to measure health insurance that have emerged in the literature. The report by Dr. Helen Levy in this series provides a historical perspective on how these methods evolved. We take as our starting point that different schools of thought co-exist currently, and present the ways in which they differ, how the measures are operationalized and some implications of related choices.

The first method (Method 1) takes what we will call a "resource transfer approach." Although individuals are rarely presented with the opportunity to receive the value of the health insurance in exchange for refusing that coverage, health insurance is an in-kind benefit into which society invests resources and thus it could be valued at that resource cost (which may or may not also reflect the market value). This perspective, first introduced by Smeeding (1982), has been refined to introduce exact ways of measuring the value, but this has remained the dominant approach in the literature. If a "market value" exists, it would be used; the equivalent of a premium for an employer provided policy that has no employee contribution. While market premiums exist for

employer sponsored insurance (ESI) and in ACA Marketplaces, researchers typically use the average program outlays per capita for valuing Medicare and Medicaid. The cost to society of providing public subsidies from tax collections also in theory includes the distortionary costs of raising public revenue which are ignored in practice when using only program outlays.

The second (Method 2) uses what we will call a "utility approach," asking to what degree the health insurance transfer actually was valued by the recipient, through different ways one could reveal that valuation. One way the value of insurance is revealed is by how much new consumption it enables, thus researchers initially measured the value of goods consumed, an "ex post" approach. However, this means that insurance values are not included, and moral hazard means the last unit consumed may not be valued as highly as earlier consumption. Researchers have also proposed alternative ways to address the fact that utility received from health insurance maybe less than the transfer amount by capping the income increment that is added to health insurance. This solves some objections to the transfer method, but in an arbitrary manner. Adding a capped amount prevents a scenario where someone with very low means for basic necessity appearing to be no longer in need of resources if they are provided with a costly health insurance policy. A recent rigorous welfare analysis and causal identification of the effect of Medicaid expansion on medical care use and spending now presents a preferred normative valuation of health insurance by the recipient of a publicly subsidized policy (Finkelstein et al., 2019). However, this strategy means that the value of uncompensated care should also be added to those receiving Medicaid as well as the uninsured.

Regardless of the way health benefits are measured through either method, studies find that adding in-kind health benefits to measures of economic well-being (income) tends to reduce the amount of inequality observed. For example Garfinkel et al. (2006) demonstrate this is true for across-country inequality measures. It is not surprising that when inequality is measured incorporating in-kind benefits, less inequality is recorded than with cash income alone because “on average, half of welfare state transfers in rich nations are in-kind benefits” (Garfinkel et al., 2006).

Another direct implication of including in-kind health insurance in income is that the share of the population in poverty reduces, holding poverty threshold values constant. However, a separate theme in this literature points out the desirability of raising the official poverty threshold to incorporate health care needs at the same time that health insurance is added to income. This argument has what seems uncontroversial merit–and the Health Inclusive Poverty Measures (HIPM) (Remler and Korenman, 2021) provides a way to operationalize this by using the cost of a

standard community rated product. While convenient, this too is arbitrary and thus future literature may suggest alternative methods based on welfare analysis.

As pointed out by Smeeding (1982) during the initial growth of health insurance benefits provided by the government in the 1970s, the importance of valuing Medicaid and Medicare will likely only grow in the future, given factors such as population aging, increases in medical knowledge and specialty medicines, and possibly the extending decline of employer health insurance. Health insurance is the largest component of in-kind benefits provided through US social insurance (Barnes et al., 2021). As of 2019, almost 6% of GDP is spent on health benefits through social insurance. Federal social insurance outlets on all other categories are less than 1% of GDP. Approximately half of all Americans receive employer-subsidized health insurance (ESI), a trend that has held stable among large employers while it has fallen among smaller employers. Despite falling rates of ESI, increases in public health insurance have resulted in the lowest uninsurance rates in US history in 2021. However, the official Census Bureau poverty measure introduced in the mid 1960s does not incorporate health insurance, thus it cannot reflect the well-being impacts of vast policy induced improvements in access to health insurance in the last decades, including the Children's Health Insurance Program (CHIP), the Affordable Care Act (ACA) Medicaid and Marketplace expansions, and the COVID-19 Public Health Emergency (PHE) Medicaid expansion.

Before we delve into the methods used in the literature, we first describe the way health insurance is currently valued by various federal agencies whose responsibilities include providing measures of income, and whether it is closer to Method 1 or 2 in intent.

The CBO, which issues periodic reports on the distribution of household income, allocated in its 2022 report the average cost to the government of providing Medicaid to household income, and thus is consistent with Method 1 (CBO, 2022).[1] It further shows that of the four in-kind benefits that it adds to the income measure, Medicaid is by far the largest currently, and provides the largest change in the 41 year period tracked by the report.

The official U.S. Census Bureau poverty measure, established following interest in measuring poverty after President Johnson's "War on Poverty"[2] does not include health insurance, and the newer Supplemental Poverty Measure (SPM), developed in 2010 also "does not directly value

[1] CBO provides code for imputing the value of Medicaid to merge with ASEC 1980-2020, at https://github.com/US-CBO/means$_t$*ested*$_t$*ransfer*$_i$*mputations.*

[2] See https://www.federalregister.gov/documents/2020/02/14/2020-02858/request-for-comment-onconsiderations-for-additional-measures-of-poverty for a well explained history of the poverty measures in the U.S.

health insurance provided publicly or privately" (Dalaker, 2017a). Instead, it only subtracts the value of health care costs paid out of pocket from the income measures (including medical out-of-pocket costs such as health insurance premiums, physician co-pays, and over-the-counter medication (Dalaker, 2017a)). Thus while the SPM acknowledges that health care is a need, it does not add in any value of health insurance (Dalaker, 2017b; Fox and Burns, 2021), thus does not fit in either Method 1 or 2.

There are several alternatives to the SPM that have been advanced by various studies and reports. For example, in the "resource transfer" approach, Burkhauser et al (2019) develop the concept further through the Full-Income Poverty Measure (FPM) (US Council of Economic Advisers, 2019) which incorporates the value of health insurance at full market costs (average premiums for employer health insurance). Burkhauser et al (2019) note that this measure may underestimate the importance of health benefits when implemented in typical survey data like CPS ASEC as there is well documented decline in reporting of health insurance over time. This issue has only been exacerbated during the pandemic (Hest and Blewett, 2022), thus is a concern to which we return later.

Adapting the measure of income will mechanically cause poverty to be less prevalent if the poverty threshold is also not adapted. Adding the value of health care needs is the approach taken in the Health Inclusive Poverty Measure (HIPM) (Remler and Korenman, 2021). The Census SPM has also been advanced as a solution to poverty measurement, but does so in a way that mechanically *increases* poverty- by reducing income by the cost of health care while not altering the poverty threshold.

This HIPM measure Remler et al. (2017) adjusts the poverty level by adding basic health insurance as an essential need, using the price of the ACA Marketplace second lowest silver plan. They argue that although health care needs differ by person, the fact that ACA has made health insurance community rated means that it is possible to use one value of health insurance across all people regardless of health status (Remler et al., 2017; Remler and Korenman, 2021). This is a clever way to quantify the amount by which health insurance poses a need to individuals and families. The authors also add the value of health insurance into the resource measure, but do so in a way that caps the value added to be no more than the cost of the benchmark plan, when someone has no premium bills out of pocket. If there are premiums still paid, they are subtracted from the benchmark premium before that is added to resources. In reality, the actual cost of employer health insurance may be above the cost of marketplace plans, because of the wider

provider networks or other potential ways that ESI plans may be more costly. However, aside from minor potential quibbles, the HIPM adjustment to income fits Method 1 as it adds a market value.

Until 2015, the Census Bureau provided a measure in the ASEC called fungible value of Medicaid and Medicare (US Census Bureau, 2021). This measure required two pieces of information: person level market value of health insurance, and family level measures of food and housing. The market value of health insurance part fits Method 1. Medicaid was calculated with different values by state for three groups (children, adults, and blind/disabled) and Medicare by state for two groups (elderly, and blind/disabled). These values were obtained by calculating program costs and dividing by the number of enrollees (and using inflation factors for the lag usually present in health care data). However, the fungible value actually added to income is less than the market value; until the family income meets some basic level of need for food and housing expenses, no value of Medicaid or Medicare is added to resources. Until the family has income above the minimum spending level by more than the market value of the health insurance, only a fraction of the health insurance value is added to benefits. Thus, this is a somewhat arbitrary implementation of Method 2.

Although the literature on the value of health insurance has been vast, it lacked an empirical welfare analysis until (Finkelstein et al., 2019) laid out a very rigorous theoretical and empirical method to translate the causal effect of Medicaid on spending and health care use into welfare metrics. Taking advantage of the experimental study design of the 2008 Oregon Health Insurance Experiment, the authors find that the welfare benefit of a dollar government outlay on Medicaid is 20 to 40 cents to the beneficiary, and that very little of it comes from the insurance value and rather from the transfer value. The reason that Medicaid is valued so little from a utility perspective is that a sizable portion of costs (80%) when uninsured are covered by others (uncompensated care, implicit insurance). However, net of transfers, Medicaid beneficiaries highly value the new access it provides, almost at a dollar for dollar in some cases. But there is also possible moral hazard that reduces the value even of this net new access provided. Thus this research provides a very solid basis for Method 2 (utility approach). It is worth keeping in mind that the utility approach literature does not imply that the transfer approach literature was attempting to accomplish the same aim. It would be a mistake to frame the "transfer approach" Method 1 as being utility based because if viewed in that light, the transfer approach would amount to using an ad-hoc way to value utility from Medicaid. The transfer approach remains used in prominent post 2019 literature (Piketty et al., 2022; Larrimore et al., 2021) but the utility

approach now presents a more rigorous alternative set of measurement for questions more appropriate to this approach to measuring public health insurance.

In 2020, an OMB Interagency Technical Working Group on Evaluating Alternative Measures of Poverty issued in the Federal Register a request for comments on additional methods for computing alternative poverty measures. Their deliberations include possible ways to add the value of health insurance benefits (including a possibility of using administrative data that would solve measurement errors), but to date no new poverty measure has resulted from those deliberations. The value of health insurance also needs to be addressed in the consumer price index (CPI) and producer price index (PPI) literature. Berndt et al. (2001) discuss measuring the CPI for health care. They state "...where medical care goods and services are provided by the government without direct charge, or with only nominal direct charges, data on revenue or receipts for medical care may not be available or may not be relevant." These authors discuss the difficulty of incorporating health outcomes into measures of CPI and PPI, foreshadowing current concerns also of valuing health insurance differently depending on how much good health it produces, i.e. do we "get what we pay for" in health care (National Research Council (US) Panel to Advance a Research Program on the Design of National Health Accounts, 2010).

There are other reasons apart from fungibility to disagree on the way to measure health insurance. One of these reasons why we may question valuing health insurance at cost is because we are not sure how to know whether we "get what we pay for" in health care. National Research Council (US) Panel to Advance a Research Program on the Design of National Health Accounts (2010) lays this out well. It says, "Relative to knowledge about health care expenditure and medical science, much less is known about the return that individuals, and society in general, receive for the investment in health." There is acknowledged inefficient care (waste) in the system but Cutler et al. (2022) points out that as a whole we receive the expected return for our spending. The National Research Council panel made recommendations for tracking what we put in and what we get out, in National Health Accounts. However, many aspects of recommendations (e.g. adding some clinical measures to healthcare claims data) still are data shortcomings today, thus we do not have a way to operationalize the wish to measure health benefits according to what it produces in good health.

How we measure benefits matters substantially to the insights drawn from the data. Within the literature of measuring income, there are measurement questions aside from health insurance values. Another conceptual issue is the unit to use: the tax unit or household matters because household usually includes multiple tax units, and sharing of household shelter and other

resources means there is lower basic needs than if we assume each tax unit lives separately. For example, Burkhauser et al. (2012) find that whether the middle class are seen as having benefited or been left behind by economic prosperity during 1979-2007 depends on the unit of measurement - using tax unit, pre-tax pre-transfer income of the median household rose only 3.2% in the 1979-2007 time period, but when measured as the broadest size-adjusted household, post-tax post-transfer income with health insurance, median income growth during the same period increases 36.7%. This illustrates that accounting for a more complete measure of well-being is needed for drawing conclusions that might drive policy.

2 Related Research

Existing research generally takes the Method 1 approach to valuing health insurance, using average program cost or premiums. There are also several past examples using Method 2 (although most have thusfar used somewhat arbitrary approaches to reducing the value of health insurance or not included the value of insurance). Analysts using a utility calculation have at times relied on a consumption model of health care spending to calculate the value of health insurance. Meyer and Sullivan (2003) discuss the factors that may cause people to prefer a consumption based measure. This utility approach links to the U.S. Census Bureau's concept of the fungible value of health insurance.

2.1 Method 1 - Resource Transfer Perspective

The resource transfer perspective uses the value of public insurance to define the monetary amount that an insured person would have to pay to buy a private insurance plan that covers the same services. This idea, formalized in Smeeding (1982), is the same principle used in the most recent U.S. government report on income distribution, the CBO's calculation of the distribution of household income in 2019 (CBO, 2022). This measures income as: income before transfers and taxes + means-tested transfers - federal taxes, defining the values of Medicare, Medicaid, and the Children's Health Insurance Program (CHIP) as the average cost to the government of providing these benefits. The CBO includes social insurance benefits; Medicare as income before transfers and taxes, while Medicaid and CHIP are counted as means-tested transfers. Garfinkel et al. (2006) similarly value health insurance based on the average per capita expenditures for public health subsidies as well as employer subsidies in their concept of "full income." The authors also adjust

health insurance value by age under the assumption that the value of insurance will vary by age bracket.

In their 2012 analysis on the economic health of the middle class, Burkhauser et al. (2012) showed that including health insurance benefits in measurements of income has a significant impact on understanding the economic resources available to the middle class, which has important implications for public policy, a point reflected in numerous ACA related inequality publications (Sommers and Oellerich, 2013; Buettgens et al., 2021). In their alternate analysis of income trends from 1979-2009, Burkhauser et al used the ex-ante value of government-funded and employer-provided health insurance to calculate post-tax, post-transfer income plus health insurance.

Piketty et al. (2018) developed a prototype to estimate the distribution of national income in the U.S. using tax, survey (CPS), and national accounts data. They include Medicare and Medicaid in the in-kind social transfer category, measured as cost value and imputed as a fixed amount per beneficiary for each program. Although for a different reason than Burkhauser et al, they too use the Method 1 approach of using a resource transfer basis.

In response to criticisms that the resource transfer perspective leads to underestimates of poverty and income inequality (Deaton, 2020), Saez and Zucman (2020) acknowledge the shortcomings of measuring post-tax income using the full cost of federal health care programs to calculate in-kind transfers. They note that conceptually, the best alternative might be "to assign the perceived cash value of individualized in-kind transfers to recipients, while treating the rest as a collective public good" or to use disposable cash income. However, they argue that these approaches would not add up to total national income, and that there is no feasible way to perfectly measure post-tax income. "Once we understand how distributional national accounts are constructed, a reasoned use of these statistics becomes possible—just like a reasoned use of GDP statistics becomes possible once we understand their strengths and limitations." See Dynan and Sheiner (2018) for the basic economics of the GDP measurement issues and the ways in which it could be viewed as a measure of aggregate income.

2.1.1 Further Considerations Under the Resource Transfer Perspective

Using the resource transfer approach to calculating the value of health insurance raises a number of methodological questions. For instance, this approach is founded on calculating the value of premiums, but this is obviously problematic for Medicaid and Medicare, or where premiums for some health insurance are tax-deductible (employer-sponsored health insurance). Thus, there

may be reasons to tax adjust the premiums before adding to income. Another important question is how to handle the value of uncompensated care for the uninsured. Garfinkel et al. (2006), for instance, add an average subsidy covering uncompensated care for the uninsured portion of the population using the Medical Care Expenditure Survey. Another challenge from the resource transfer perspective is whether health insurance value should be adjusted by age, and whether it should take into account public policies that prohibit the use of age and other factors in pricing. Garfinkel et al. weight their imputed values by age category so that the value is higher for older individuals than younger ones, but Remler et al. (2017) point out that community rating allows the use of a standard premium for their purposes.

CBO's methodology counts Medicare benefits (excluding low-income Part D subsidies) in their measure of pre-transfers and taxes income, and then adds the value of meanstested transfers including Medicaid, CHIP, and other health assistance programs to calculate household income after transfers and taxes (CBO, 2022). On the other hand, Burkhauser et al. (2012) add the value of health insurance to post-tax, post-transfer income. In a similar analysis, Kaestner and Lubotsky (2016) found that decisions about how to add the value of Medicare and Medicaid and employer-provided health insurance to measures of pre- and post-tax income has a significant impact on income inequality calculations. Burkhauser et al. (2013) use data from the Current Population Survey for 1995–2008, writing at a time when the ACA was passed by not yet implemented (2012), and show that adding the value of health benefits (both employer- and government-provided health insurance coverage) reduces inequality in the population distribution of well-being. Many papers have used the resource transfer approach (also explained as the insurance value of public benefits), such as Spadaro et al. (2013) in the case of Spain, finding that inequality decreases when adding this value. Buettgens et al. (2021) add the value of health insurance (Medicaid in particular) to find that the ACA "reduced income inequality and that the decrease was much larger in states that expanded Medicaid than in states that did not."

Decisions over how to incorporate tax liabilities and refunds also raises additional questions about which unit of measurement to use. Burkhauser et al illustrated the importance of this decision in their analysis of the economic health of the middle class, finding that whether the unit of analysis was households or tax units had a significant impact on measures of economic well-being (Burkhauser et al., 2012).

Employer fringe benefits related to health also may extend to separate programs that are health related. Some options include employee wellness programs (Jones et al., 2019) which would also be important in theory to add to income.

It is also not clear how we should factor incomplete insurance: services that are not covered by insurance may generate individual medical debt. As of June 2021, $88 billion of medical debt is registered on consumer credit cards (Consumer Financial Protection Bureau, 2022), representing the most common debt form on credit records. This may be an underestimate of its importance since not all medical debt is reported to reporting agencies. Finding a way to incorporate medical debt in income accounting also would allow assessment of policies such as the federal 2022 No Suprises Act to reduce surprise medical billing that sometimes accompanies out of network care.

Health insurance plans differ substantially in the networks available, as cost sharing and premiums are more under scrutiny than network adequacy (Meyers et al., 2022). There may also be long wait times or long travel times for coverage which costs less. Evidence from ACA Medicaid expansions show that there are capacity constraints which increase ED wait times, for example (Allen et al., 2022). Value may also be viewed through the lens of quality of care or health outcomes, such as the industry productivity measure proposed by Cutler et al. (2022). In both the utility and the transfer approach, quality related aspects of coverage are reflected in the values used, thus there may not be any more estimation needed to address these issues.

2.2 Method 2 - Utility Perspective

The utility approach frequently uses consumption as the basis for valuing health insurance. Deaton (2020) argues against the resource transfer methodology of measuring the value of government-funded health care based solely on the cost of those programs. He notes that this method measures health care "not by its output in terms of its contribution to health, but by its inputs, such as the number of procedures, doctor visits, or prescriptions sold." Deaton argues that the real benefits of health care are therefore often less than their costs, such as in the case of unnecessary and expensive procedures. Valuing health care purely based on costs ultimately underestimates poverty and income inequality.

The Bureau of Labor Statistics (BLS) created a prototype model of the distribution of personal consumption expenditures using the Consumer Expenditure Survey (CE), and note that using only out-of-pocket health care spending results in an under-estimation of health expenditures on the lower end of the income spectrum and an over-estimation at the upper end (Garner et al., 2022). Therefore, the BLS prototype includes employer-paid health insurance and government-funded insurance programs as third-party payer expenditures on behalf of households, as reflected by Personal Consumption Expenditures (PCE). Since the CE only collects data on out-of-pocket

spending, BLS imputes health expenditures. For Medicaid and CHIP, the value is imputed as the national average expenditures per enrollee. Medicare is valued at the national average benefits net of premium. The value for other public health programs (e.g. Veterans Administration or the Indian Health System) are calculated as the national average expenditures on private care.

One way that the utility perspective acts is through Medicaid saving beneficiaries out of pocket expenses that would have led them to fall into poverty. Sommers and Oellerich (2013) use the Census Bureau's SPM to subtract out-of-pocket medical expenses from family resources under status quo and under an assumption of no Medicaid. If Medicaid were removed, they use an imputation method whereby some people would be uninsured and others would find alternative coverage. They conclude that without Medicaid, out of pocket expenses would be higher and thus more families would fall into poverty. Specifically, "Medicaid kept at least 2.6 million—and as many as 3.4 million—out of poverty in 2010, making it the U.S.'s third largest anti-poverty program." Zewde et al. (2021) address the Sommers and Oellerich (2013) study and instead assume that those who lose Medicaid remain uninsured. Using a HIPM framework which still leaves individuals needing health care expenses to be covered, directly leads to estimates implying that the ACA lifted even more individuals out of poverty.

De Nardi et al. (2016) and Adams et al. (2022) both attempt to understand patterns in health care consumption using survey and administrative data. In their analysis of medical expenditures for older Americans using data from the Medicare Current Beneficiary Survey (MCBS), De Nardi et al calculates medical spending to include out-of-pocket spending as reported by respondents (excluding insurance premiums), and cost of care based on administrative data. Adams et al use administrative data from Kaiser Permanente to show that financial assistance programs temporarily increase health care utilization, concluding "Financial assistance also increases the detection and management of treatment-sensitive conditions (e.g., drugs treating diabetes), suggesting that financial assistance may increase receipt of high-value care."

The National Academy of Sciences' (NAS) report on modernizing the Consumer Price Index explains that the CPI currently only uses direct out of pocket spending to estimate medical care expenditures for consumers – it therefore includes premiums (Medicare parts B and D) and direct costs (e.g. deductibles, copayments), but excludes Medicaid, Medicare Part A, and employer-paid health insurance premiums (National Academies of Sciences, 2022). As a result, the CPI gives health care a much smaller weight than does the National Income and Product Accounts (NIPA). The NAS panel used the BLS methodology for estimating health insurance costs to consumer, focusing on "the pros and cons of two different conceptual frameworks for pricing health

insurance: the indirect method, currently used in the CPI, and the direct method, currently used in the Producer Price Index (PPI) for health insurance." The NAS report also outlines how additional sources of data could be used to improve the CPI medical care index, including "insurance filings, claims data, hospital data, scanner data on drugs, etc."

Meyer and Sullivan (2003) discuss the quality of available data for taking a consumption based approach, arguing that consumption is better linked to well-being, and is measured better in practice, so could be the basis on which benefits are determined even though income based means testing for eligibility is more convenient. They discuss measurement error and underreporting, comparing survey data to aggregates in administrative data.

Cutler et al. (2022) propose a methodology to use the ex post approach to measure productivity of the health care industry in the U.S. using national satellite accounts. They view improved health as the primary output for the industry, so productivity should adjust for quality of care. A satellite account would measure "health outcomes and medical inputs, and thus more accurately account for new goods and substitution of treatment." They propose to use medical conditions as the industries, rather than providers, and then develop a prototype satellite account for health care spending for the elderly population from 1999 to 2012 using data from the MCBS and NHANES. They define output as quality-adjusted life expectancy, using survey data combined with mortality rates from Vital Statistics. In this way they try to adjust for changes in quality of medical care.

Hall and Jones Jones et al. (2019) similarly use national accounts to create a measure of optimal health care spending to maximize social welfare. In their economic model to estimate the health share of total consumption, they value health care spending as the consumption of health services plus government expenditures on health goods and services, excluding investments in medical facilities. Based on their analysis, they argue that their model suggests "the possibility that optimal health spending is substantially higher than actual spending." (p.61)

Finkelstein et al. (2019) take a different approach to the utility perspective by calculating the "normative value" of health insurance for Medicaid recipients (willingness to pay). They suggest that Medicaid is best understood as being comprised of two parts: 1) a monetary transfer to outside parties to subsidize care for low-income patients (they estimate about 60% of Medicaid's gross expenditures) and 2) subsidized insurance for recipients. They conclude that "all approaches suggest that recipient willingness to pay for Medicaid is substantially below its gross cost."

The discrepancy between how individuals value benefits versus the cost of benefits was prominently discussed in Haber (1990), who note that there is almost no way to bridge this divide– one fundamentally chooses one perspective to answer a different question than when using the

other measure. A 2012 CBO report on the distribution of household income and federal taxes in 2008 and 2009 also discusses how the value of health insurance as defined by willingness to pay varies widely across income groups (CBO, 2012). For some recipients, particularly low-income ones, the value of health insurance is less than the cost of providing it because of constrained resources; for other recipients, the value is higher than the cost because they are unable to purchase it at the same price available to an employer or the government, i.e. the fungible value of health insurance.

2.2.1 Additional Considerations Under the Utility Approach

Estimating health insurance value using a consumption approach raises a number of methodology questions. For instance, approaches may differ on whether to include premiums as out-of-pocket costs (De Nardi et al., 2016). Other considerations include whether health insurance values should be adjusted for income levels or for differences in cost of living by geographic region. For instance, (Jones et al., 2019) develop a theoretical model of optimal health care spending that accounts for trade-offs between quality of life and quantity of health care consumed. One way they do this is by distributing health care consumption across 5-year age categories and including age-specific mortality rates in their model.

A further challenge in using a consumption lens is that standard economic models of income and price elasticity do not readily apply to health care. For example, health insurance may be viewed as effectively lowering the price of medical care, which according to standard economic theory will increase consumption (moral hazard). However, while this may be true for some types of medical care, such as preventative care that can be consumed by healthy and sick patients alike, this same logic cannot be applied to specialized or more intensive care that only sick patients will consume. Lowering the price of cancer treatments, for instance, will not induce more consumption of such treatments by healthy individuals (Nyman 2012). Both consumption and utility of medical care, then, will be driven less by prices than by individual needs at specific points in time.

The impact of additional health care consumption on well-being is similarly affected by wide variations in individual health needs and ability to access needed care. For a healthy person with few health needs, a low level of consumption of medical services may be linked to high levels of well-being, whereas a person with chronic or serious health conditions needs higher medical care consumption to increase well-being. Such issues are closely linked to important questions about equity in health care (Gravelle, Morris, Sutton 2012).

Burtless and Svaton (2010) combines all three perspectives to analyze how ex ante, ex post, and willingness-to-pay measures of health insurance value impact income distribution, examining in turn the costs of implementing health insurance programs, CPS and MEPS expenditures data, and the Census Bureau's measure of the fungible value of health insurance.

2.3 Additional Measurement Issues

As shown in the previous literature, there are many alternative ways of measuring health insurance values. One advantage to using a consumption value is that there is higher volatility over time in whether someone has health insurance than in actual health care consumption. Thus, consumption values or willingness to pay values solves the issue of uncompensated care. Another more minor measurement/conceptual issue is whether when assessing changes in inequality, we look at the same person over time, or whether we look at whoever occupies that position in the distribution (cross sectional comparisons over time). An example of a paper that follows people longitudinally is Auten and Gee (2009) using tax data. In our empirical analysis with the SIPP, we are able to follow the same individuals during the pandemic and can assess how health insurance affects the position they occupy over time.

Another measurement/conceptual issue is whether inequality is tracked using 90/10 ratio or share of income going to bottom of income distribution. For example, Meyer and Sullivan (2003) measure 90/10 and Burkhauser et al. (2012) measure share going to top 1%. Measurement should also build in the fact that the values of health insurance are themselves estimates; the MEPSIC-List Estimates provide the standard deviations of the estimates, but the Medicare, Medicaid and the ACA Marketplace premiums do not include standard deviations, thus any hypothesis testing later conducted should account for this fact. This is a second order issue given that these estimates are based on many assumptions to begin with. For example, although we impute the value by children and adults separately by year and state, it is likely that many other factors (including health status) factor into our valuation of the policy. Even the utility approach of 20% to 40% value is based on averages, and thus we expect much measurement error when these averages are assigned to individuals to indicate their valuation of health insurance. There is also measurement error in surveys. Studies that incorporate health insurance over the pandemic period should keep in mind that as Medicaid eligibility froze (Glied and Swartz, 2022), measurement error itself may have changed (Hest and Blewett, 2022), thus results may be affected.

3 Methods

In this section, we illustrate some of the methods choices using survey data combined with estimates of health insurance values.

Measures of Health Insurance Values

Although the U.S. Census Bureau ceased to provide calculations related to average dollar values for Medicaid and Medicare in the ASEC public use files after the 2014 ASEC, they provided a guide to researchers wishing to update those numbers for future use.[3] The reason given by the Census Bureau for this change is that "Due to security concerns, the Center for Medicaid and Medicare Services has limited the availability of data used to update the market value of Medicaid." Thus, since not all fungible values could be calculated, the Medicare, food and housing measures were also removed.

1. *Medicare*: The person-level measure of Medicare was created by the Census Bureau to be at the state by year level for two categories of beneficiaries: "Blind/Disabled," and "Elderly." The 2014 ASEC contained values from 2013; these data were made available through the Census website along with instructions for possible inflation adjustments with new years of data. The Medicare data were constructed with annual enrollment data combined with annual program payments data, both by state. Payments divided by enrollment resulted in the mean Medicare outlays per enrollee. According to Census, these values were provided from CMS, "program payment analysis based on a 5% sample and inflated to represent payments for the 100% FFS payments..". These values were available with a 2 year lag, so the 2014 ASEC would have 2013 data, obtained from actual data from a previous year, inflated to 2013. The inflation adjustments were made in the following way. First, the researcher would use the national trend in expenditures from the Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. Using the most recent Annual Report [4] we first used the "HI and SMI Average per Beneficiary Costs" from the Annual Report to calculate the percentage growth between the latest data year and the years of interest for us (2019 and 2021), after summing the parts for "HI" and "Part B." This then inflates the values at the state level. For Part D, there were no state level measures available, thus the report would calculate the part D net costs per enrollee, at the national level (after removing premiums paid from the total

[3] https://www.census.gov/programs-surveys/cps/technical-documentation/user-notes/fungiblevalues.html contains the details on calculation of fungible values for Medicaid and Medicare, which involved imputing full values first.

[4] https://www.cms.gov/files/document/2022-medicare-trustees-report.pdf

expenditures). These values were found in the Medicare Enrollment table and the table for "Operations of the ...(Cash Basis)." We followed these instructions for updating the state level series that was used in the 2014 ASEC to the values needed for the 2019 and 2021 years of the SIPP. We merge in these values to the SIPP for individuals who indicated Medicare coverage, assigning different values for those 65 and above or below. An alternative source of these values is the Kaiser Family Foundation (KFF) Medicare Spending per Beneficiary tables, available currently until and including 2020. Since this did not include 2021 data, we decided not to use these data as it would involve following the earlier instructions for inflation updates to 2021, but these data are a strong alternative for future iterations of this work.[5]

2) *Medicaid*: The guidance for Medicaid values shows they are also calculated at the state by year level, but this time using three categories: children, adults, and elderly. The total Medicaid enrollment and total Medicaid payments are collected for those who are "not medically needy," "not classified at ICF/MR, and...not receiving benefits for nursing facility services." Dividing the two yields the mean Medicaid outlays per person. The values are once again inflated to the year in question. The inflation process is described as using the Actuarial Report on the Financial Outlook for Medicaid. This document was available only for 2018 as the latest version[6] containing data through 2017, thus we used an alternate source for these data. We used the KFF estimates [7] by state and by category of seniors, individuals with disabilities, adults, children and newly eligible adults, for enrollment and for spending. We divided one by the other to obtain per capita numbers, and inflated the 2019 numbers to 2021 using the national total health expenditures inflation factor.[8] We then merge values for children to those aged 0-18 in the SIPP, and the values for "adults" to adults 19-64. We could also calculate those newly eligible for Medicaid by using state by state rules on who are pre-ACA eligible adults vs others to take advantage of the categories of data made available in this resource. However, the values for "adults" (who are more likely to be parents and thus likely older in composition) and for "newly eligible adult" (childless adults generally, and thus likely to be younger) are not similar to each other–in 2019 one is

[5] https://www.kff.org/medicare/state-indicator/per-beneficiary/?currentTimeframe provides values for 2013-2020. The categories are not identical to the Census Bureau's spreadsheet used for the 2014 ASEC, but as there is one overlap year, it is possible to compare values. The ASEC 2014 spreadsheet nationwide value for Medicare for "all" (elderly and disabled) was $10,449.98 per beneficiary, while the KFF estimate for "Medicare Part A and/or Part B Program Payments Per Traditional Medicare Enrollee" was $9,323.

[6] https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/ActuarialStudies/MedicaidReport

[7] https://www.kff.org/medicaid/state-indicator/distribution-of-medicaid-enrollees-by-enrollment-group

[8] https://www.healthsystemtracker.org/chart-collection/u-s-spending-healthcare-changed-time/, resulting in an inflation rate of 13.25% from 2019 to 2021 in nominal dollars.

$3,840.37 and the other is $5,225.21, thus in future work it may be worth discerning who are the newly eligible adults in the survey for the states with Medicaid expansions. By contrast, the value for children is $2,837.07, and the value for individuals with disabilities is $19,587.85.

3) *ESI*: Following prior studies, we use the Medical Expenditure Panel Survey Insurance Component List Sample (MEPS-IC List) from the Agency for Healthcare Research and Quality (AHRQ), which is available for 2019 and 2021. The MEPS-IC List is a sample from the U.S Census Bureau's Business Register list of employers, inquiring about their health insurance offers and, if offering, their plans. The sample size is about 40,000 private establishments and 3,000 government units. This survey provides aggregates to the public.[9]We obtain the total premium paid by the employer for coverage, by year, by whether coverage is single or family plan, and by whether the establishment is in a smaller (less than 50 employees) or larger (50 or more employees) establishment. We also obtain the amount paid by employees as the premium contribution. We subtract the employee contribution from the total premium to arrive at the amount that is "gifted" by the employer. As an example, in 2019, the total premium for a smaller firm, for family coverage, was a national average of $19,417.

Caveats: These categories are not meant to be an exhaustive list of categories by which the values of health insurance should be merged. For example, health insurance premiums may differ for family plans which are +1 dependent vs those with an unlimited number of dependents, but we choose for simplicity only to track one category of family coverage, although the data contain many possibilities. Some of the decisions are data driven–state level estimates are easily gathered from the MEPS-IC, but no reliable source is known for county level premiums. There is nonetheless substantial variation by state shown in the data that we do use.

4) *ACA Marketplace Premiums*: We do not use marketplace premiums in our calculations as we would only add the subsidy portion to income, which we leave for future work. But we describe here the method one would use to include these values. First, we track the total cost of the average silver plan in a state using data from the KFF 2019 and 2021 portal for average ACA marketplace premiums by metal tier and by state. The premiums listed are for a 40 year old, thus we could adjust the premiums by age category, using the ACA rule that the baseline rate (defined as for a 21 yr old) and that for the oldest individual (age 64) cannot differ by more than a factor of 3.[10] Second, we would seek the amount of this premium that is paid by an individual vs subsidized by the government, in a way similar to the ESI premium calculation above, using their

[9] https://datatools.ahrq.gov/meps-ic

[10] https://www.kff.org/interactive/subsidy-calculator/

income and the subsidy formula for the ACA. This is the amount that should enter discussions of being added to the resources. This adjustment has not been done in this draft. 5) *Uncompensated care*: We estimated total uncompensated care costs (from AHA Annual Survey Data, 2000-2020) and obtained the following values. In alternate definitions of income in our empirical work, we include the value of uncompensated care in the utility approach (method 2). • 2019: $41.61 billion 2020$:42.67 billion

We obtained the total number of uninsured/public insurance under age 65 (from MEPS, in thousands) as • 2019: o <65, Public only: 59881 o <65, Uninsured: 20436 o Total: 80,317
• 2020: o <65, Public only: 59152 o <65, Uninsured: 21151 o Total: 80,303

We thus arrived at the per capita uncompensated care costs (total costs divided by total number of uninsured/public insurance < age 65) as • 2019: 518 • 2020: 531

In relevant calculations, we apportion a share of uncompensated care costs as added income if a person either reported having Medicaid (SIPP variable rpubtype2 = 1) or did not report having any type of public or private insurance (rhlthmth = 2) as thus were uninsured, using these values.

We isolate the measurement issues directly related to health insurance, but acknowledge that there are several other decisions that are relevant for measuring income. First is whether one should use the family or the household as the unit for analysis, and second, whether one should adjust for household (or family) size.

There is also another fairly large issue relevant for the measuring of health insurance: survey undercounts. The next step is assembling the survey data and creating indicators for different types of health insurance plans. Survey undercount/ non-response means that there are many more listed in administrative Medicaid enrollment files than are found in surveys. While this indicates a missed opportunity to include the value derived from the provision of several types of health insurance, Medicaid is likely the largest underreported category. This is because ESI and Medicare are more salient–there are likely few Medicare eligible individuals aged 65 and over who are likely to underreport Medicare, and ESI is actively maintained through the payment of fairly substantial employee contributions, so it is unlikely this form of insurance is underreported. However, especially during the pandemic when Medicaid disenrollment was frozen, there is evidence of fairly substantial gaps between the survey reports and administrative totals.

Survey Data: SIPP

We use respondents to the Survey of Income and Program Participation (SIPP) for our illustrative activities. The SIPP is a national survey conducted by the U.S. Census Bureau to collect information on individuals, families and households, inquiring about their income, employment,

participation in various government programs, and, appropriately for this exercise, health insurance. We use the 2018 panel of the SIPP, which is interviewed in four waves, in each of four years, asking information about the previous 12 months. We use waves 2 and 4 of the 2018 SIPP, which contains information from 2019–the last full year before the pandemic began, and 2021, the last full year of the pandemic for which data currently exists in the SIPP. The fact that we are able to gather data before and during the pandemic from the same panel also means we can illustrate longitudinal aspects of incorporating health insurance into economic well-being. For convenience, we use data from the most recent month in the year and multiply reported amounts by 12 to arrive at annual figured, rather than sum up the individually provided past 12 months of data. Our comparisons are in nominal dollars and include individuals of all ages 0 and onwards in the sample unless otherwise stated.

We have decided for this version to drop individuals with military insurance, and to impose the private sector premiums onto everyone who is employed, including public sector individuals. Later, we could take advantage of MEPSIC containing a sample of public sector employers to bring in premium values that way. The SIPP also contains measures of how much individuals pay out of pocket for premiums which could be used to create the HIPM measure.

4 Results

With our assembled data from the SIPP 2019 and 2021 panels as well as the estimated per capita values of the major forms of health insurance, we have performed some very preliminary illustrative exercises to understand the sensitivity of different outcomes to the decisions facing us when adding health insurance to measured income.

As a baseline, we first calculate the (weighted) average per capita annual household income for 2019 and 2021. Shown in Table 1, the value is $37{,}885$ in 2019 and $40{,}924$ in 2021.

The sample includes all individuals on whom the SIPP collects information, age 0 years and onwards, and income refers to the household rather than the family values reported for income. However, health insurance and its values are only recorded and added at the individual level. In the next tables we add the value of health insurance using different methods. First, we use Method 1, the "resource transfer" approach, and recalculate the averages by adding in Medicaid, Medicare and ESI to those reporting those three types of coverage. Adding health insurance to income increases the average value by 17.49% in 2019, and by 17.54% in 2021. The incomes without health insurance grow 8.02% from 2019 to 2021. The growth rate of income when health

insurance is added by Method 1 is slightly higher (as expected because nationally there was higher insurance coverage in 2021 than 2019) at 8.07%. We next use Method 2, which implements a utility approach by making one change to Method 1-by using only 20% (a lower bound from (Finkelstein et al., 2019)) of the Medicaid value, for those with Medicaid coverage. The next rows implement two other changes. In one we assume that Medicare is also utility valued at 20% its value, and in the last, we assume that Medicaid and Medicare are only valued at 20% of its value, but that uncompensated care costs are equally distributed across the uninsured, Medicaid and Medicare insured. As expected the values for income with health insurance are lower when including lower than full values of health insurance. There was a slightly larger income increase in 2021 than in 2019 from adding health insurance when adding full cost, but if we used the other measures, there was slightly more of an increase in 2019 vs in 2021 The first method adds health insurance at full values (transfer approach). The next set of rows are various interpretations of the utility approach. First, we change on the Medicaid values, adding 20

While Table 1 is for all ages, Table 2 confined the sample to aged 25 years and up. Table 2 presents weighted means as in Table 1, but also shows distributional values at the 25th, median and 75th percentile, as well as the 90/10, 90/50 50/10 ratios and Gini coefficient.

For the discussion below, we focus just on two measures, the Gini coefficient (an overall measure of income distribution which may dampen changes at the extremes) and the 90/10 ratio, which will more reflect extremes.

We intend this only to be a preliminary exercise to illustrate more sophisticated analysis that is possible. In future work, we plan to add analysis of the HIPM by using our alreadymerged Markeplace premiums (the age-adjusted local cost of the ACA Marketplace premium to the relevant poverty level, and to the income measure after accounting for premiums paid out of pocket).[11] This will allow us to compare the Method 1 (all market values) to Method 2 (all market values except Medicaid is valued at 20% as a lower bound), to the method implied by the income measure in the HIPM (replace all insurance values by the ACA local, age-adjusted marketplace premium). When adjusting the poverty level also by this measure, we will be able to judge the impact of these decisions on the share of the population in poverty, the average incomes, and on changes in incomes from 2019 to 2021 among a fixed group of individuals, the changes among specific demographic groups, as well as changes in distributional measures Adding health insurance causes the 90/10 ratio to reduce by 17We also plan a calculation in which 80% of the Medicaid value is added to those without health insurance, which would be akin to accounting

[11] The SIPP records out of pocket premiums in the variable "THIPAYC".

for the low value placed on Medicaid due to the existence of implicit insurance. There are many other methods decisions described in this report that could also be layered on to these calculations.

5 Conclusion

The primary measure of health insurance for income has occurred through a resource transfer approach, which best asks the question of how we have distributed scarce resources, and to evaluate how resource distribution has been affected by public policy such as the Affordable Care Act. When measuring whether individuals are in poverty, a more nuanced approach is taken where health insurance needs are accounted for in the poverty threshold as well as in the income measure. The current HIPM accomplishes this, but in a somewhat ad hoc way by using a standard insurance product for all. There may be value in tying these efforts to a more explicit welfare framing. There has also been several questions for which a utility based approach was more appropriate, for example when asking how much individuals actually value the coverage provided. An important insight and advance in this literature is that primarily because of the value of implicit insurance from uncompensated care, Medicaid (and presumably Medicare as well) are not valued at cost. Thus, a welfare approach would acknowledge this and transfer only a portion of Medicaid spending to the Medicaid insured, allocating other amounts to the uninsured or to the public who value the transfers from tax revenue.

There are unanswered questions in the literature related to valuing medical debt. Here, some of the arguments present in the discussions on accrued vs realized capital gains may be useful– should the debt be valued while it exists or only when and if it is paid? There are many other measurement issues that empirical work could refine, but it should be kept in mind that using aggregated values carry large degrees of measurement error. While small tweaks may correct second order issues in measurement, there are first order concerns that are not easily addressed. Nevertheless, the long standing literature in valuing in-kind benefits has produced for health insurance the ability to continue using the resource transfer approach while also now having more theory based approaches for a utility approach, when the relevant questions call for the different measures.

Tables and Figures

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Table 1: Per Capita Annual Incomes with and without Health Insurance

Mean Per Capita Annual Income

	2019	2021	Percent Increase 2021-2019
Without insurance	$37,885	$40,924	8.02%
With insurance	$44,509	$48,102	8.07%
20% Medicaid	$43,593	$47,078	7.99%
20% Medicaid and 20% Medicare	$41,640	$44,852	7.71%
20% Medicaid/Medicare + uncompensated care	$41,816	$45,030	7.69%

Income Change from Each Addition (Base= No Health Insurance)

	2019	2021	Percent Increase 20212019
With insurance	17.5%	17.5%	0%
20% Medicaid	15.1%	15.0%	0%
20% Medicaid and 20% Medicare	9.9%	9.6%	-3%
20% Medicaid/Medicare + uncompensated care	10.4%	10.0%	-3%

Note: All calculations use SIPP sample weights. All ages are included, total personal income is reported. Health insurance values are only added to individuals with those measures of insurance. "With insurance" refers to Method 1, full values of health insurance for Medicaid, Medicare and ESI. "20% Medicaid" refers to Method 2 implemented by including only 20% of the Medicaid value. "20% Medicare and 20% Medicare" refers to Method 2 implemented with Medicare also being valued only at 20%. The last measure takes the previous measure and adds uncompensated care costs to everyone who is either uninsured, Medicaid or Medicare insured.

Table 2: Distribution of Per Capita Annual Income, Age 25+

	Without Insurance		With Insurance		20% Medicaid		20% Medicaid & 20% Medicare		20% Medicaid & 20% Medicare & uncompensated care	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
25th Percentile	14,400	14,400	23,975	25,147	22,812	24,000	17,054	17,307	18,300	18,384
Mean	53,171	57,085	61,589	66,185	60,816	65,309	58,058	62,181	60,150	62,063
Median	33,444	35,244	42,573	45,263	41,712	44,038	38,184	40,084	39,909	40,187
75th Percentile	62,988	66,228	73,173	77,793	72,951	77,424	70,724	75,001	73,524	74,025
90/10 ratio	12.43	13.08	10.32	10.70	12.22	12.46	14.58	15.72	18.05	18.98
90/50 ratio	3.09	3.10	2.71	2.75	2.76	2.80	2.95	3.02	3.03	3.08
50/10 ratio	0.25	0.24	0.26	0.26	0.23	0.23	0.20	0.19	0.17	0.16
Gini coefficient	0.53	0.54	0.48	0.49	0.49	0.50	0.52	0.53	0.52	0.53

Measure Change from Each Addition (Base= No Health Insurance)

	Without Insurance		With Insurance		20% Medicaid		20% Medicaid & 20% Medicare		20% Medicaid & 20% Medicare & uncompensated care	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
Median	base	base	27%	28%	25%	25%	14%	14%	19%	14%
90/10 ratio	base	base	-17%	-18%	-2%	-5%	17%	20%	45%	45%
Gini coefficient	base	base	-9%	-9%	-7%	-7%	-1%	-1%	-1%	-1%

Notes: See notes to Table 1, except age is restricted to 25+ years