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RETHINKING ELDERLY POVERTY:  
TIME FOR A HEALTH INCLUSIVE POVERTY MEASURE?

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Rethinking Elderly Poverty: Time for a Health Inclusive Poverty Measure?

Sanders Korenman and Dahlia Remler

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**ABSTRACT**

Census's Supplemental Poverty Measure (SPM) nearly doubles the elderly poverty rate compared to the "Official" Poverty Measure (OPM), a result of the SPM subtraction of medical out-of-pocket (MOOP) expenditures from income. Neither the SPM nor OPM counts health benefits or assets as resources. Validation studies suggest that subtracting MOOP from resources worsens a poverty measure's predictive validity and excluding assets exacerbates this bias, since assets fund MOOP.

The SPM is based on a 1995 NAS report that recommended a health-exclusive poverty measure, despite considering it, conceptually, a "second best" to a Health-Inclusive Poverty Measure (HIPM). We analyze the reasons for the NAS recommendation and argue that constructing a HIPM is now feasible if we conceptualize health needs as a need for health insurance, and if plans with non-risk-rated premiums and caps on MOOP are universally available, a condition largely met by the Affordable Care Act and Medicare Advantage Plans.

We describe four HIPM variants and present analyses that suggest the SPM treatment of MOOP results in a less valid measure of elderly poverty and an overstatement of the elderly poverty rate (by up to 5.5 percentage points or 50 percent). Many elderly classified as poor by the SPM's unlimited MOOP deduction are not poorly insured persons with incomes near the poverty line, but well-insured persons with incomes well above the poverty line.

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*Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care.*

From Article 25, The Universal Declaration of Human Rights, adopted by the United Nations, December 1948.

## **I. Introduction**

Emerging from the Great Recession, the United States faces critical decisions about fiscal and social priorities. Current policy is unsustainable even under optimistic growth scenarios: the Federal fiscal imbalance—the present value of deficits projected under current tax and spending law—is estimated to be \$70 trillion (Kotlikoff 2009; Kotlikoff and Burns 2012).

Laurence Kotlikoff (2009) estimates that expenditures on the elderly<sup>1</sup> already average over \$30,000 per person aged 65 and older, and...

by 2030, when baby boomers are fully retired, the average benefit per older...will be at least \$50,000 (measured in today's dollars) and represent more than 100 percent of per capita United States GDP. The remarkably high levels of older benefits, current and projected, are due, in the main, to the growth in the health care component of total Social Security, Medicare, and Medicaid outlays

In 2007, expenditures on these three programs exceeded \$1.2 trillion, the vast majority of which flow to the benefit of older persons (Ben-Shalom, Moffitt and Scholz, 2011, Table 1), and are projected to climb sharply in the years ahead with growth in the population over age 65 and particularly the continued escalation of health care costs.

Beyond receiving increasing public transfers, successive cohorts of elderly have experienced higher lifetime earnings and have arrived at older ages with greater wealth than the preceding cohorts (e.g. Scholz and Seshardi, 2008), and some cohorts have experienced increases in wealth at older ages, at least between age 65 and 75 (Poterba, Venti and Wise, 2012).

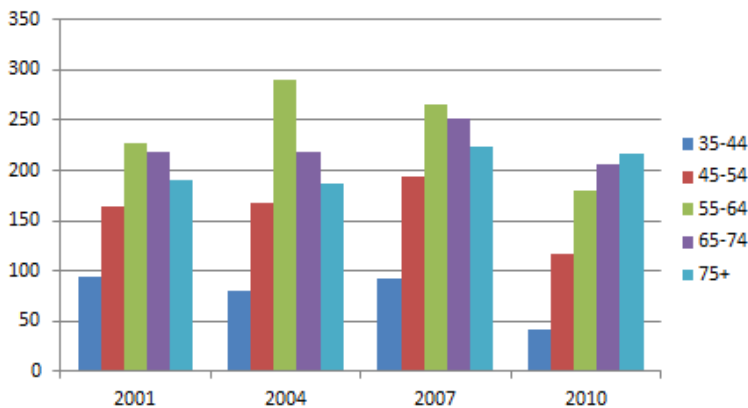
Exhibit 1, based on the Federal Reserve's Survey of Consumer Finances (Bricker, Kennickell, Moore & Sabelhaus, 2012), shows the striking change in the age-distribution of net worth over the past 10 years. In 2001, 2004 and 2007, median wealth rises with age at younger ages, peaks at age 55 to 64, and falls with age at older ages, consistent with standard life-cycle savings behavior. The decline at older ages reflects both the tendency of retirees to draw down

assets to finance consumption, and higher lifetime earnings and wealth enjoyed by younger cohorts as a result of economic growth. However, in 2010 the inverse-u-shape that typically characterizes age-wealth profiles had disappeared, and the oldest age group (aged 75+) is now the richest (at least at the median).

The change in the age-wealth profile occurred in part because of cyclical factors: cohorts under age 75 were hit harder by the Great Recession than those aged 75 and older. But it also represents a trend of increasing wealth among the older population. For example, median net worth of the older population increased notably between 2001 and 2007, while gains at other ages were modest or non-existent (Exhibit 1). The increase in the wealth of the elderly relative to other age groups goes back at least to 1984 (Fry, et al., 2011). Moreover, younger cohorts will be asked to foot the bill for Social Security and Medicare for the baby-boom retirees, and to begin to fill in the enormous fiscal hole that grew deeper in the Great Recession.

**Exhibit 1: Wealth by age, 2001 to 2010**

**Median Family Net Worth by Age of Head**  
(in thousands of \$2010)



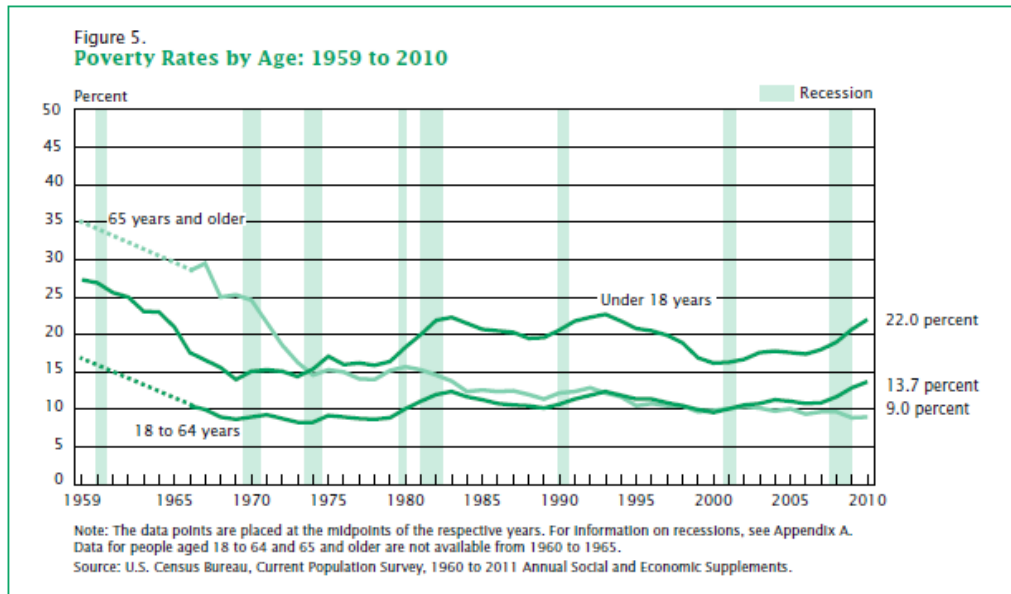
Source: Bricker, J., Kennickell, A., K. Moore & J. Sabelhaus. 2012. Changes in US family finances from 2007 to 2010: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin* 98(2): June. Table 4.

The combination of increasing public transfers and increasing wealth has driven down poverty rates among the elderly by more than 25 percentage points over the past 50 years, from over

35% in 1960 to 9% in 2010 (Exhibit 2; US Bureau of the Census, figure 5, 2011). The poverty rate for older persons, mostly retired, has been lower than the poverty rate for working-age adults since 2000, and is currently less than half the poverty rate for children, which stands at 22%.

Elderly poverty also appears largely immune to economic recessions (periods shaded in Exhibit 2), most strikingly, falling through the severe recessions of the early 1980s and late 2000s, as rates for children spiked. Moreover, these are trends in a poverty measure that does not count assets, health insurance or health care provided by government or employers as income or “resources” available to the elderly. Yet, as we have seen, the elderly have substantial assets and transfers in the form of health insurance are the largest and arguably most valuable transfers to the elderly since, due to chronic conditions and health risks of advanced age, many would have difficulty purchasing private health insurance. Although traditional Medicare has many gaps in coverage, if an elderly person is poor and has few assets, her out-of-pocket medical expenses will be covered by Medicaid. Thus, Medicaid serves as backstop “Medigap” (secondary) insurance and means-tested long-term care for many persons who did not have low incomes over the working ages (i.e., the middle class).

**Exhibit 2: Poverty rates by age**



In contrast, approximately 18% of persons under the age of 65—10 percent of children and 22 percent of adults aged 18 to 64—were uninsured in 2010 (U.S. Census 2011; Table 8). Although poor children are generally eligible for Medicaid, until the Medicaid provisions of the ACA go into effect in 2014, many low-income adults will not be entitled to Medicaid.<sup>2</sup> Thus, not only do the elderly on average have more wealth and lower poverty rates than children and working-aged adults, all else the same, counting health insurance (public or private) as a resource would widen further their economic advantages. Thus, scholars generally agree that increases in real transfer expenditures on the elderly coupled with private income growth have markedly reduced their poverty (Scholz, Moffitt and Cowen, 2009; Engelhardt and Gruber, 2004) relative to other age groups.

Surprisingly, however, cracks in this consensus have begun to appear, centered on poverty measurement. Flaws in the OMB/Census poverty measure (OPM) are well known with the first critiques dating to nearly its birth (e.g., Friedman, 1965). The Census Bureau has for many years pursued efforts to improve its poverty measure and has published alternative poverty series. In 2011, the Bureau began to publish the Supplemental Poverty Measure (SPM; see box) as part of its P60-series Current Population Reports (Short, 2011).

### **Exhibit 3: Key SPM adjustments to the OPM**

1. New **poverty thresholds**, set to 33% of the median expenditures on “FCSU” (food, clothing, shelter and utilities)<sup>1</sup>
2. A new **measurement unit** (economic unit) that includes all related individuals, co-resident unrelated children, cohabiters and their children.
3. A new **resource measure** that includes the value of many near-cash in-kind government benefits (e.g., food and housing assistance), but subtracts taxes (or adds tax credits), some work expenses, child support payments, and Medical Out-of-Pocket (MOOP) expenditures.

The SPM shows the elderly to be far poorer than previously thought (US Bureau of the Census 2011b, NYCCEO 2011). The Census Bureau's SPM for 2010 put the elderly poverty rate at 15.9% far higher than the OPM rate of 9.0% (Exhibit 4, first and second row). Although the OPM rate

for the elderly falls substantially below the OPM rate for non-elderly adults (13.7%) and children (22.0%), the SPM rate of for the elderly slightly exceeds the corresponding rate for non-elderly adults, and approaches the SPM rate for children (18.2%).

**Exhibit 4: Official and Supplemental Poverty Rates (%), 2010**

	<i>ALL</i>	<i>&lt;18</i>	<i>18-64</i>	<i>65+</i>
OPM	15.1	22.0	13.7	9.0
SPM	16.0	18.2	15.2	15.9
SPM, not subtracting MOOP	12.7	15.4	12.4	8.6

Source: Official: Census 2011, Table 4. Supplemental: Short 2011, Table 3a.

Results such as these have fueled calls to sustain or even develop new policies for the elderly, as in Butrica, Murphy and Zedlewski (2006):

Higher alternative poverty rates among older adults and especially high rates among some subgroups show the importance of protecting low-income older adults when considering reforms that reduce the cost of government programs for retirees. They also underscore the importance of considering new policies to boost the incomes of the poorest older adults. Medicare reforms that increase cost sharing should exclude the lowest-income older adults.

In short, the SPM figures imply that, despite spending an amount equal to 70% of per capita GDP on each person over age 65, on average, the elderly remain among the most economically vulnerable groups of American society. How can that be?

Empirically, the entire difference between the OPM and SPM elderly poverty rate results from their different treatment of MOOP expenditures. The SPM subtracts MOOP expenditures from family income, while the OPM ignores MOOP expenditures altogether. When the Census makes all SPM adjustments to the OPM other than subtracting MOOP expenditures from resources, the elderly poverty rate falls slightly, from 9.0% to 8.6% (compare the first and third rows of Exhibit 4, rightmost column). When it then subtracts MOOP expenditures (shown in the second row), the elderly poverty rate rises to 15.9%, the SPM elderly poverty rate (Short 2011, Table

3a; see Exhibit 4). Clearly, many older persons have substantial MOOP expenditures, making elderly poverty rates highly sensitive to their treatment.

Many SPM adjustments have proven relatively uncontroversial, particularly the redefinition of the measurement unit, the revised equivalence scales and the inclusion of near-cash in-kind benefits that can be used to meet FCSU (food, clothing, shelter & utilities) needs. More controversial are the linking of thresholds to national consumption expenditures, which effectively converts the poverty measure from an indicator of absolute deprivation to one of relative deprivation, and the exclusion from resources of a recipient value of health insurance and the deduction from resources of actual MOOP expenditures.<sup>3</sup> The choice between a relative and absolute poverty measure is predominantly philosophical and disagreements about it are unlikely to be resolved by analysis.<sup>4</sup> The treatment of health insurance and expenditures in poverty measurement, though also partly philosophical, is more conceptual and empirical, and is our focus.<sup>5</sup>

The SPM's revisions to the OPM were guided by recommendations of a 2010 inter-agency working group on poverty measurement (US Bureau of the Census, 2010) which, in turn, based recommendations of an expert panel published in a 1995 National Academy of Sciences (NAS) report, *Measuring Poverty: A New Approach* (Citro and Michael, 1995) as well as research over the 15 years since its publication. The exclusion of health insurance benefits from resources in the SPM is noteworthy in light of the recommendation to include the value for other in-kind benefits such as food and housing assistance. The exclusion of both MOOP expenditures and health insurance from resources results from the decision to base the SPM thresholds on non-medical (FCSU) needs. This recommendation was not based on empirical evidence that the exclusion of health benefits and expenditures improves the poverty measure's predictive validity compared to the OPM. Indeed, to our knowledge, at the time of the implementation of the SPM, no study had compared the (empirical) predictive validity of the OPM and SPM. Rather, the recommendation was based on the practical difficulties of implementing a threshold that included health—difficulties that stemmed in large part from the structure of the US health care system.



Deducting MOOP from resources likely exacerbates another shortcoming of the income-based poverty measures: not counting assets as resources. Most people save explicitly to fund consumption in retirement, including MOOP expenditures (DeNardi et al., 2001). Someone who uses her financial assets to purchase better medical insurance or care would, all else the same, be deemed poorer according to the SPM.

The first purpose of this paper is to assess whether the SPM treatment of health insurance and MOOP expenditures results in an improved measure of poverty, especially for the elderly. In Section II, we examine a variety of evidence suggesting that the poverty rates of the elderly should be lower, perhaps far lower, than indicated by the OPM. This evidence raises questions about the validity of the SPM, since, as have seen, the SPM raises the elderly poverty rate, both in absolute terms and relative to other ages, compared to the OPM. In fact, the SPM stands alone in suggesting the OPM elderly poverty rate is substantially downward biased.

We next examine evidence on the predictive validity of the OPM and SPM. We conclude that the existing evidence, including analyses conducted at our request, suggests that subtracting MOOP expenditures from resources worsens a poverty measure's ability to predict hardship among the elderly. A possible explanation for this finding is linked to the exclusion of assets from resources, since assets both reduce hardship and fund MOOP expenditures. Finally, health shocks do not appear to result in reported material hardship for the elderly but do for the near-elderly.

One might argue that our goal of assessing whether the SPM treatment of MOOP expenditures improves its predictive validity is inappropriate because, as the name suggests, the SPM is intended to supplement, not replace the OPM. We disagree. First, many proponents of the SPM clearly hope that it will come to be regarded as superior to the OPM and, over time, replace the OPM. Second, the decision to base the SPM on non-medical needs and resources is sometimes justified by the claim that health care deprivation is best measured separately from "material" deprivation (Citro and Michael, Chapter 4; Blank, 2008). Blank (2008) in particular argues that multiple measures of deprivation provide a more complete picture of need than

any one measure can.<sup>6</sup> We agree, but nonetheless believe that calculation of multiple measures does not reduce the importance of creating the best official measure of poverty possible.

Therefore, the second purpose of the paper is to explore the possibility of constructing a Health Inclusive Poverty Measure (HIPM). In Section III, we first analyze the reasons that the NAS panel recommended that health benefits be excluded from, and MOOP expenditures subtracted from, resources for the SPM. We find that the rationales for these recommendations, although sensible at the time, are less compelling today. We identify conditions that make a HIPM feasible and illustrate four approaches to constructing a HIPM. The key conceptual insight for a HIPM is to consider “health needs” as the need for health insurance, rather than health care. The key practical development that makes a HIPM possible is the universal availability of health insurance plans with non-risk-rated premiums and caps on MOOP.

In Section IV, we show how the practical conditions for HIPM implementation are met for the non-elderly by the full implementation of the Affordable Care Act scheduled for 2014 and, with the exception of holes in prescription drug coverage, are virtually met for the elderly by recent changes to Medicare Advantage Plans. We also include sample HIPM calculations. We present preliminary analyses that suggest the SPM’s unlimited deduction of MOOP results in an overstatement of poverty by up to 5.5 percentage points (50 percent) and that those elderly classified as poor due to the unlimited MOOP deduction are not poorly insured persons with incomes near the poverty line, but well insured persons with incomes well above the poverty line. Section V discusses caveats to and critiques of our proposed HIPM. Section VI concludes.

The construction of a Health Inclusive Poverty Measure is timely. First, we believe that it would be instructive to have a HIPM to demonstrate the effect of health benefits, including benefits provided by the Affordable Care Act (ACA), on poverty. Ironically, in subtracting MOOP expenditures (including premiums) from resources, the SPM may show the ACA’s provision of highly subsidized health insurance to be immiserating for some low-income families.<sup>7</sup>

More importantly, to make good use of limited government funds in a time of continuing fiscal and economic distress, we need accurate information about the costs and benefits of government programs and the economic welfare of our citizens. Knowing who is poor is critical

to protecting the neediest to the greatest extent possible as we seek to restore fiscal balance. Clearly, for judging changes in economic inequality, and the effects of policy and priorities for intervention, it is a matter of some importance whether the poverty rate of the elderly is about the same as the shamefully high child poverty rate (as with the SPM), or about half the child poverty rate (as with the OPM), or approaching zero (as suggested by evidence reviewed in the next section). While social spending prioritizes health and long-term care for the elderly, technological and globalization shocks to the labor market have led to calls for shifting resources elsewhere, particularly for education and training (Autor, 2010) or income support for working-aged adults and their children.

## **II. Validity**

### *Premises and Definitions*

The answer to the question: Does the SPM's treatment of health insurance and medical out-of-pocket expenses result in a "better" measure of poverty? depends in part on the answers to a set of inter-related questions: What is poverty? What constitutes a "better" measure? What is the purpose of poverty measurement? Although different scholars and analysts have answered these questions differently, we begin with a set of premises, definitions and priorities that we believe are widely accepted.

We believe there is broad consensus that poverty is the inability or failure to attain "basic needs." Basic needs may simply reflect social norms about a minimally acceptable level of subsistence or, in principle, be derived from scientific study of the resources required for survival, full human function or full participation in society. For the purposes of this paper, however, it suffices to agree on the following: First, there is some minimum material consumption deemed "basic." This is generally influenced by social norms. Second, health care is an essential part of basic needs.<sup>8</sup> The latter might seem obvious, since health care is often essential for survival, full human function or full participation in society, but its meaning is complicated by the differences between and inter-relationships among health, health care and health insurance. Conceptually, one may define "needs" as resources needed to maintain

survival or function, but for some individuals in some medical conditions, that is impossible. For example, some forms of cancer are incurable, no matter what resources are used. So, we cannot define health care needs purely in terms of health. In modern society, health care is often largely funded through health insurance. Is, then, health insurance a basic need? We defer this issue until later, but note that it is essential to distinguish health care and health insurance, as well as to understand their inter-relationships.

Having defined poverty as the inability or failure to attain a set of basic needs that includes health care, what would constitute a good measure of poverty? There are, broadly speaking, two measurement approaches. The first determines whether a family actually “consumes” an amount greater than the level of basic need. (If the set of basic needs includes different dimensions—health care, shelter, food-- then a determination may need to be made about consumption on more than one dimension.) The second method determines whether the family has adequate resources overall to support consumption at or above the basic needs level, whether or not it actually consumes the level and types of goods deemed “basic needs.” Conceptually, resources are anything that allows the family to meet basic needs, no matter the source (market, government, gifts), form (cash, in-kind) or period earned (current income, savings out of past income).

The quality of a statistic cannot be judged apart from how it is used. Different measures may be needed for different uses. We believe there is broad consensus that a poverty measure should adequately reflect the overall level of deprivation in society, and, perhaps more importantly, describe differences in deprivation between groups at a given time, changes in deprivation over time, and changes over time in group differences in deprivation (i.e., group specific trends and differences). Trends and group differences in deprivation help analysts judge the health of the economy as well as social and political institutions, and to understand the impact of social programs and other policies on material hardship or deprivation.<sup>9</sup>

Because our analysis combines the poverty and health economics literature, we need to explain and clarify some terms. In the poverty literature, MOOP refers to both health insurance premium payments and payments for medical care made out-of-pocket. In the health economics literature, by contrast, MOOP often refers only to payments for medical care, which we will refer to as “non-premium MOOP.”<sup>10</sup> We will use the term “premium MOOP” to mean out-of-pocket payments by individuals towards the purchase of insurance.

*Are the elderly much poorer than we thought?*

As we have seen, the SPM practice of subtracting MOOP expenditures from income markedly increases elderly poverty. Is it plausible that the elderly are much poorer than the OPM indicates? We now review evidence to suggest that an improved poverty measure would raise, not lower, elderly poverty rates. First, the OPM fails to count both health insurance and assets as resources, yet the elderly have substantial amounts of each. Second, consumption-based poverty measures show rates of elderly poverty far lower than the OPM.

*Health insurance.* Not surprisingly, adding the value of health insurance to resources would markedly reduce elderly poverty. Adding health insurance to resources is problematic, however, because it is not clear that health insurance or care is included in the needs threshold, an inconsistency. But as an accounting exercise, it illustrates the magnitude of the transfers of health insurance to the low-income elderly.

Several studies found that adding a value of Medicaid and Medicare to income reduced elderly poverty rates, sometimes to near zero (e.g., those cited by Ellwood & Summers 1985; see Meyer and Sullivan 2010a for estimates that add an insurance value of Medicare and Medicaid to consumption for calculation of rates of consumption-poverty).<sup>11</sup> For example, in 1986, the elderly poverty rate would have fallen (approximately) from 12.4 percent to 4.1 percent if a market value of Medicaid and Medicare were added to income (Citro and Michael, 1995, Table 4-2).

More recent data confirm the magnitude of transfers to the low-income elderly, including in health insurance. Ben-Shalom, Moffitt and Scholz (2011; Tables 4 through 6) show that, in 2004, the pre-transfer monthly poverty gap among the elderly (the aggregate amount by which the elderly's pre-transfer income fell below the poverty line) was \$8.8 billion in 2007 dollars. The post-transfer poverty gap—calculated by adding to pre-transfer income cash and near-cash transfers, but not Medicare or Medicaid—was \$0.6 billion. Therefore, cash and near-cash transfers eliminated 93% of the pre-transfer poverty gap among the elderly. Further adding a value for Medicaid based on the costs of HMO plans eliminates \$10 billion of the monthly US poverty gap for persons of all ages, though that figure includes spending on poor pregnant women and children in addition to the low-income elderly. Adding a value of Medicare (based on the costs of PPO plans) would close \$10 to \$11 billion of the US poverty gap for persons of all ages, though that figure includes spending on non-elderly disabled individuals. Nonetheless, it is quite likely that \$20+ billion in monthly Medicaid and Medicare spending on the poor through programs that overwhelmingly target the elderly would, if counted, eliminate the remaining \$0.6 billion elderly poverty gap, even if heavily discounted to reflect a recipient or fungible value.

*Assets* As Exhibit 1 demonstrates, median wealth is greater among the elderly than at any other age. Furthermore, wealth grew faster between 2001 and either 2007 or 2010 at older ages than at any other age, and has done so at least since the early 1980s (Fry et al. 2011). Clearly, counting assets (in some fashion) would only lower elderly poverty rates, both absolutely and relative to younger persons.

Deducting MOOP exacerbates the shortcomings of not counting assets. Consider two people with the same income, one of whom has higher assets and uses them to purchase better (higher premium) health insurance and/or better care conditional on insurance. Using the SPM approach, that individual would be deemed poorer than the person with fewer assets and lower quality health insurance or care. The magnitude of the overstatement of poverty in the SPM from the combination of MOOP deduction and asset exclusion is unknown. But, due to the

generally greater wealth and worse health that accompany old age, the SPM treatment of MOOP expenses will likely bias upward the elderly poverty rate relative to rates at younger ages. Particularly relevant is the elasticity of MOOP with respect to wealth. Several studies show that, among the elderly, MOOP (not including premiums) is sensitive to wealth, although more sensitive to health status (Goldman and Zissimopolous, 2003; Marshall, McGarry and Skinner, 2010; Webb and Zhivan, 2010). For example, Webb and Zhivan (2010) find, all else the same, that being in the top wealth quintile raises MOOP by 28% relative to the middle quintile.<sup>12</sup> Marshall, McGarry and Skinner (2010) show that end-of-life MOOP spending on long-term care (nursing home, home care, helpers, home modifications) is particularly sensitive to wealth.

However, it is the impact of wealth (and transfers) on the status of low-income elderly that is most relevant for poverty measurement.

#### *How poor are the low-income elderly?*

Several studies demonstrate that the “income poor” elderly, on average, consume much more than their income (Meyer and Sullivan, 2010a; Charles et al., 2006; Fisher et al. 2009). For example, Fisher et al. (2009) report that nearly three quarters of income-poor persons aged 65 and older were not “consumption poor” (i.e., consume or spend less than the OPM--Official Poverty Measure--threshold).<sup>13</sup> Among the income poor who were not consumption poor, median assets (and net worth) totaled \$70,000 to \$80,000, in dollars of 2003, based on data from the Consumer Expenditure Survey (CEX) averaged over 1983-2003 (Fisher et al. 2009, Table 5). Yet, median assets of the elderly today are substantially higher than in the 1980s and 1990s, suggesting that asset holdings for the low-income elderly are higher today.

Not surprisingly, rates of consumption poverty are far lower than rates of income poverty, standing at about 5% to 6% of the older population roughly twenty years ago (Fisher et al. 2009); or 4% or today (Meyer and Sullivan 2010a). Furthermore, although they are needier on average than the income-poor elderly, the consumption-poor elderly are not all needy: many

have incomes that exceed poverty line, and have assets, but are “thrifty” (Charles et al., 2006; Meyer and Sullivan, 2010a; Fisher et al., 2009).<sup>14</sup> The joint occurrence of income and consumption poverty is rare, with prevalence around 1% to 4% of the older population. For example, Charles et al. (2006), using data from the Health and Retirement Survey (HRS), report that two to three percent of the older population is both consumption poor and income poor. Hurd and Rohwedder (2006) report a corresponding figure of 1.4% based on a different sample from HRS. The corresponding figure for those aged 65 and over in the CEX is three to four percent (Fisher et al. 2009, Table 3), though, again, this study averaged data from 1983 to 2003.

Thus, the weight of the evidence suggests that the elderly poverty rate should be lower, perhaps much lower, than the OPM rate. That the SPM results in a much higher elderly poverty rate than the OPM due to the deduction of MOOP expenditures from resources should raise concerns about validity of that adjustment and the SPM measure. However, the possibility remains that subtracting MOOP expenditures could improve the predictive validity of the SPM relative to the OPM—the correspondence of the poverty measure to other indicators material hardship—an issue that we examine in the next section.

### *Material Hardship Validations of the SPM and OPM*

If we built a better measure of poverty, how would we know? Researchers have attempted to validate poverty measures empirically by examining how measures correlate with indicators of “material deprivation” or hardship of various types. In this section, we summarize key results from five studies that use this approach, some of which also explore the treatment of health insurance and MOOP expenditures among the elderly: Meyer and Sullivan (2010a); Charles et al. (2006); Levy (2009); Butrica et al. (2008); Butrica et al. (2009). We provide more detailed reviews and summaries of these studies in the Appendix because, in some instances, the authors furnished updated, new, or unpublished results at our request. These results may not have been discussed elsewhere. We also discuss Butrica et al. (2008) in detail in the Appendix because we believe that their conclusion—that subtracting MOOP expenditures from income



results in poverty measures that accord better with material hardship--rests on a faulty interpretation of some of their data, which, in fact, is inconclusive.

These assessments generally consist of comparisons of correlations between different poverty measures and reported experiences of material hardship of various types, an approach (to our knowledge) pioneered by Christopher Jencks and colleagues Susan Mayer and Barbara Boyle Torrey (Mayer and Jencks 1989; Jencks and Torrey, 1988).<sup>15</sup> Material hardship is measured by indicators such as missed meals, delayed or foregone medical care or dental care due to lack of resources, substandard housing conditions or crowding, and the absence of household durables such as washing machines. The studies we review consider the sensitivity of results to the inclusion or exclusion of MOOP expenditures from consumption or income, or to the addition of an estimate of the fungible value of employer-provided or public health insurance. The key results *for the older population* from this literature are the following:

1. Subtracting MOOP expenditures from income does not improve prediction of material hardship (Levy 2009). Subtracting MOOP from income weakens the relationship between income and both food hardship and medicine hardship, suggesting that it is increases in income (not income net of MOOP) that reduces hardship. Interestingly, subtracting MOOP from income also reduces the estimated effect of poverty (not income) on food hardship, but not on medication hardship. This finding suggests that elderly persons may protect other dimensions of material well-being from the effects of medical expenditures, though, admittedly, Levy presents information on only one non-medical hardship dimension (food). Nonetheless, this evidence clearly raises doubts about the idea that MOOP expenditures represent non-discretionary (e.g., health-shock-driven) reductions in resources available to support non-medical dimensions of material well-being.

2. Among the elderly, and even the low-income elderly, health care spending does not “crowd out” other types of spending. Specifically, in HRS data that follows the same individuals over time, increases in the number of reported health conditions do not significantly or substantively

reduce non-medical expenditures among those over age 65 (Butrica et al. 2009). In fact, this study concludes:

“The results suggest that high out-of-pocket health care spending does not generally force older Americans to reduce their living standards. However, low-income adults ***in their fifties and early sixties*** appear to curtail their non-health spending in response to high health care expenses when they develop multiple medical conditions. These findings suggest that Medicare and Medicaid generally protect older adults from high out-of-pocket health care costs, but that important gaps in the health care safety net exist for older people who have not yet reached the Medicare eligibility age of 65” (emphasis added).

This conclusion is all the more surprising since the last year covered by their data is 2005, a year before Medicare Part-D began paying for prescription drugs.

3. Assets matter for older persons’ experience of material hardship, controlling for income (Levy 2009; and, indirectly, Meyer and Sullivan 2010a).

Indeed, the importance of integrating income, consumption and wealth in poverty measurement is emphasized by the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz, Sen and Fitoussi, 2009, Executive Summary): "But for many purposes, it is also important to know what is happening at the bottom of the income/wealth distribution (captured in poverty statistics), or at the top. Ideally, such information should not come in isolation but be linked, i.e. one would like information about how well-off households are with regard to different dimensions of material living standards: income, consumption and wealth. After all, a low-income household with above-average wealth is not necessarily worse-off than a medium-income household with no wealth."

In sum, these studies show that subtracting MOOP from income does not improve the correspondence between income poverty and non-medical material hardship among the elderly. Furthermore, older persons use their savings/assets to support their consumption (and MOOP expenditures) and material well-being, so ignoring assets and subtracting MOOP from income distorts measures of the material status of the elderly. Although additional study is

warranted, we find little empirical evidence to support the SPM treatment of medical care and insurance.

### **III. Barriers to Constructing a HIPM**

#### *NAS Rationale: MOOP Expenditures, Insurance & Poverty Measurement*

We have argued that deducting MOOP from resources, not crediting health insurance in resources and not including health care or insurance in needs distorts the poverty measurement of the elderly, relative to the non-elderly. Why did the NAS expert panel recommend this approach? In fact, the panel commissioned Moon (1993) to describe approaches to including health care or insurance into poverty measurement—to create a HIPM—and considered these approaches. They found a variety of conceptual and practical barriers and complications that made a HIPM impractical and/or invalid. Some of these barriers are direct while others barriers and complications are indirect and emerged only in analysis of particular proposed approaches. Many interact with one another. We briefly describe each of the issues, focusing first on health care and then on health insurance.

*#1 Difficulty valuing heterogeneous health needs* Health care needs vary enormously with health status, even minute clinical detail. A healthy person might need nothing; someone with diabetes needs regular outpatient care and supplies; and someone who had a heart attack needs large amounts of intensive hospital care. Thus, adding an expected/average health care need to the threshold would represent poorly the needs of both the healthy and the sick.

*#2 The distribution of MOOP expenditures has a high variance and is skewed (i.e., a small number of people have very large expenditures).* Because health status varies greatly and sick people consume vastly more health care than healthy people (Berk and Monheit 2001; Cohen and Yu, 2012), MOOP also has high variance and is skewed. Thus, substantial spending may be required meet actual health care needs.

*#3 Needs must be met ex post, not ex ante* One approach to incorporating health care into poverty measurement is to include expected (*ex ante*) health care costs in the needs threshold. However, as discussed above, actual (*ex post*) health care needs may be much higher than

expected. Alternatively, in principle, people could meet their needs by purchasing health insurance *ex ante*, but in practice, that is not always possible. As discussed below in #5, insurance premiums may be related to health status (i.e. risk-adjusted) and thus not truly *ex ante* to health status. Additionally, cost-sharing (e.g., deductibles) associated with insurance plans means that some out-of-pocket health care spending still depends on actual *ex post* health status.

*#4 Health care expenditures are non-discretionary* According to this view, health care expenditures are not a matter of choice but are exogenous, due to exogenous health status. Non-discretionarity itself is not a barrier to constructing a HIPM, but in combination with barriers #1-#3, it makes some proposed HIPMs, such as measures that would add average health care needs to thresholds, unacceptable. Non-discretionarity was used to justify the decision to deduct MOOP expenditures from resources.

*#5 Health insurance value and availability varies widely* An alternative approach to valuing health care needs is to value health insurance needs. However, the actuarially fair premium for health insurance depends on age and health status, making insurance, like health care, difficult to value as both a need and a resource. Moreover, the availability of health insurance and premiums vary with health status and other factors such as employment status. Determining the resources needed to purchase sufficient health insurance for each individual has thus been a daunting task.

*#6 Health insurance is not fungible* Health insurance, however valuable, can be used only for health care, and is not available for purchases of other basic needs, such as FCSU.

*#7 Poverty measurement requires consistent resource and needs definitions* If neither health insurance nor health care is included in needs, then it is inconsistent to include the value of health insurance in resources. Lack of fungibility compounds this problem.<sup>16</sup>

Ultimately, the difficulty of valuing health care/insurance needs seemed insurmountable. If health care/insurance could not be added to needs and resources, then, the panel concluded, consistency demands that MOOP expenditures be deducted from resources (see #4 and #7).

The panel recognized that excluding health care/insurance entirely would mean that the revised poverty measure would not register unmet health care/insurance needs, nor the fulfillment of those needs. And one committee member, Cogan dissented, asserting that consuming health care is a choice, similar to other economic goods (Citro and Michael, pp.388-390) and therefore discretionary.

The Report acknowledged many of these drawbacks and noted that, as the structure of the health care and insurance system changes, their recommendations should be revisited (page 69):

*Finally, as changes are made to the US system of health care, it will be important to reevaluate the treatment of medical care expenses in the definition of family resources. As an example, if relatively generous health insurance coverage is made available to everyone, the amount of out-of-pocket costs that is subtracted from income should likely be subject to an upper limit or cap.*

In light of the changes to health care system that have occurred since the mid-1990s and the fundamental changes that will soon occur as the provisions of the ACA go into effect, we believe that it is time to reconsider the approach. Due to the continued complexity of the US health care system, we first consider at a conceptual level the conditions needed to surmount the barriers to creating a HIPM.

#### *Health Care System Conditions that enable a HIPM*

In order to incorporate health care and health insurance into poverty measurement, two kinds of conditions must be met. The first are conditions about the health care and insurance system. The second is agreement about what constitutes “needs” for health care and/or insurance—a partially philosophical and political issue. By specifying health needs as a need for health insurance, it becomes practical to incorporate health care and insurance into poverty measures. Therefore, we first describe conditions that enable a HIPM and later discuss insurance as a need. In considering the conditions that permit incorporation of health care and insurance into poverty, we initially focus on general conditions. We later analyze how well our current and near future systems match these general conditions.

Consider first a universally provided health care system similar to those of some European countries. Everyone is able to select a health insurance policy that has no premium or non-premium MOOP. The plan covers a certain class of medical care—that which is socially defined as essential. We will define “non-discretionary” care (tautologically) as the care covered by this plan.<sup>17</sup> Since the plan requires no premiums or cost-sharing, then all MOOP expenditures are by definition discretionary, representing a decision to pay for care outside the plan. Individuals may also choose to purchase other plans that have premium and/or non-premium MOOP (cost-sharing), and which may cover non-essential care. Anyone who chooses one of these other plans has thus chosen to have MOOP, making it discretionary. Moreover, all health care needs deemed essential by society can be met *ex ante*, rather than *ex post*, simply by not choosing one of the other plans.<sup>18</sup>

Consider how under this system health could be incorporated into poverty measurement: a HIPM. Assume that the government funds the ordinary plan for everyone who wants it. To construct a HIPM, both needs and resources would include the plan full cost—the actuarially fair premium plus administrative costs. As the NAS Report noted, however, in such systems, health needs and resources are equal, making the inclusion of health into poverty measurement seem uninformative. (However, such a measure does demonstrate the contribution of publicly-provided health benefits to closing the “poverty gap.”)

Consider now a health care system in which everyone has available a less-than-comprehensive basic plan, which we will refer to as the basic capped plan (BCP). The BCP covers all care determined essential by society, so that it is “complete” in the events, treatments and procedures covered. However, it is “incomplete” in two respects. First, a premium MOOP payment is required to purchase the BCP. But that premium is not risk-rated: it does not depend on health status. Second, the BCP has cost sharing (non-premium MOOP) with strict limits. Specifically, non-premium MOOP is capped at a moderate level, no matter health status.<sup>19</sup>

In such a system, premium MOOP for the BCP is non-discretionary, while higher premium MOOP (for some other plan) or non-premium MOOP above the BCP cap are both clearly

discretionary—not needed to meet essential health needs. We now describe how a BCP eliminates the three insurance-related barriers to constructing a HIPM and substantially reduces other care-related barriers and complications.

*#5 The value and availability of health insurance varies widely* Since everyone can purchase the BCP, and the premium does not depend on health status, its availability does not vary. While health insurance is, in some sense, more valuable to those in poor health, since the price of health insurance does not depend on health status, the addition to poverty thresholds or resources to account for health insurance also does not depend on health status.

*#6 Health insurance is not fungible* Health insurance is, of course, still not fungible. Therefore, no matter how generous a government- or employer-provided health insurance plan, it cannot increase resources available to meet basic needs (including basic health insurance needs) by more than value of the BCP. However, if we limit the contribution of health insurance to resources to the health insurance amount included in the threshold, fungibility is no longer an issue. In fact, the panel (pages 231-235) considered a single poverty index that incorporated health insurance/care in roughly this manner, but rejected it as impractical for the US health care system at the time.

*#7 Consistent resource and needs definition* By including health insurance in both resources and needs, consistency is achieved.

The following barriers remain, but are much reduced by the existence of a BCP.

*#1 Difficulty valuing heterogeneous health needs* Measuring full health care needs is no longer essential for poverty measurement. The only expenditures that vary with health status, and thus are difficult to value, are non-premium MOOP expenditures up to the cap of the BCP.

*#2 The distribution of MOOP expenditures has a high variance and is skewed* Premium MOOP under the BCP has no or limited variance (e.g., limited age and geographical variance). Non-premium MOOP up to the BCP has much lower variance and is much less skewed than it would for a population that also included the uninsured, the poorly insured and the well insured with no caps; the BCP cuts the tail off MOOP expenditures.

*#3 Needs must be met ex post, not ex ante* Most health care needs can be met *ex ante* through the BCP, but some non-premium MOOP (below the cap) will be essential and will depend on *ex post* health status.

*#4 Health care expenditures are non-discretionary* Even if health care expenditures are largely non-discretionary, MOOP expenditures above premium MOOP for BCP plus non-premium MOOP above the cap are discretionary since they result from insurance choice: One could have chosen the BCP and strictly limited MOOP expenses.

Thus, a health care system with a universally available plan whose premiums do not vary with health status, which covers all essential care and whose non-premium MOOP is capped, eliminates or substantially reduces the barriers that lead the NAS panel to give up on a HIPM.

#### *Incorporating Health Care and Insurance into Poverty Measurement*

Under a BCP system, incorporating health insurance and care into poverty measurement is possible but more complicated than under the simple universal government system. With a BCP, government or employers may pay directly for insurance (partially or fully), rather than providing funds to the individual to purchase insurance. A HIPM must therefore carefully account for plan costs in both needs and resources. Again, we use the term “plan full cost” to refer to the total cost of the insurance, irrespective of who pays. The plan full cost is often referred to as the “actuarially fair premium”—the average cost of all medical care—plus essential administrative costs.<sup>20</sup>

Under the BCP health care system, the SPM could be modified to create a HIPM in the following manner:

- Add the Plan Full Cost for the BCP to the needs threshold for everyone
- For those provided insurance by employers or government, add the Plan Full Cost of the BCP to resources *less* the actual premium MOOP payment required (but only up to the premium MOOP that would be required to obtain the BCP)
- Several approaches to non-premium MOOP are possible:

**HIPM-a:** Deduct non-premium MOOP expenditures from resources, up to the cap (maximum) for the BCP



**HIPM-b:** Add expected non-premium MOOP under the BCP to the threshold (or deduct expected non-premium MOOP from resources)

**HIPM-c:** Treat non-premium MOOP as the SPM treats FCSU needs

**HIPM-d:** Make no deductions for non-premium MOOP

None of these approaches to non-premium MOOP is perfect but the problem of incorporating health care/insurance into the poverty measure with potential for huge errors in measurement has been reduced to the more manageable problem of handling the limited non-premium MOOP expenditures under the BCP. Capping the MOOP deduction at the BCP maximum (HIPM-a) is similar to the SPM and avoids mis-classifying people who are poor due to health care needs as non-poor. However, to the extent that non-premium MOOP is discretionary, including discretionary through plan choice, this approach classifies those buying more care as poorer than they “truly” are. This is exactly the source of bias in the SPM but it is reduced in HIPM-a by capping non-premium MOOP deductions. This approach can be considered an upper-bound HIPM.

Adding expected non-premium MOOP under the BCP to the threshold (HIPM-b) risks mis-classifying people for a different reason. Those with higher-than-expected non-premium MOOP due to worse health status are poorer than measured, while those with lower non-premium MOOP due to better health status are wealthier than measured. The same type of error was described in the NAS Report when the panel considered adding a value for expected MOOP expenditures for health care to the needs thresholds. With a BCP available, however, the magnitude of this type of error is far smaller since non-premium MOOP is capped. However, to the extent that non-premium MOOP spending below the cap is discretionary, HIPM-b will overstate poverty less than HIPMa. Deducting expected non-premium MOOP has the same effect and is thus another, equivalent means of implementing this approach (Burtless and Siegel, 2004).

Treating non-premium MOOP in the same manner as FCSU (HIPM-c) has different problems. This approach would set poverty thresholds at 33% of the median family spending on “FCSU+non-premium MOOP.” However, the empirical distribution of non-premium MOOP

includes expenditures by people who have plans with higher caps than the BCP. Thus, the resulting threshold is likely to be overly generous.

Making no deduction for non-premium MOOP (HIPM-d) will systematically reduce measured poverty. This approach can be considered a lower-bound HIPM.

An advantage of HIPMs-b, -c and -d is that they do not require data about non-premium MOOP. Indeed, many datasets used in poverty research lack such data.<sup>21</sup> The less sensitive cost-sharing—and thus non-premium MOOP—is to health status, the fewer problems produced by HIPM-b and HIPM-c. For purposes of discussion, unless otherwise noted, we will focus on HIPM-a, because it is most similar to the current SPM. When our analysis applies to all approaches, we will refer to the HIPM.

Although implementation depends critically on health care policy, and the health care market, it is possible to illustrate the basic functioning of our approach. Suppose that for a family of four, plan full cost is \$15,000 for the BCP<sup>22</sup> and that the FCSU needs threshold is \$22,000. The HIPM-a needs threshold would then be \$37,000. A family with no employer or government provided insurance and no government subsidies towards their insurance would need \$37,000 to escape poverty, an amount that far exceeds the OPM or SPM threshold. However, a family with fully government provided insurance would have resources equal to their income plus \$15,000.

In other scenarios, however, additions to needs and resources could differ, illustrating the value of a HIPM in measuring hardship. For example, a family with an employer-provided insurance policy similar to the BCP but that requires \$5000 in premium MOOP to obtain would have \$15,000 added to needs, but only \$10,000 (\$15,000 - \$5,000) credited to their resources.

In summary, we have described a health care and insurance system that makes incorporating health care and insurance into the SPM feasible. That system includes a BCP available to all with the following features: (1) All essential care (as defined by society) is covered. (2) The premium is not risk-rated. (3) The non-premium MOOP is capped. However, the feasibility of this HIPM rests on the premise that it is appropriate to consider health insurance as a basic need.

### *Health Insurance as a Need*

Our approach to constructing a HIPM requires that health insurance, rather than health care, be considered a basic need, *no matter an individual's health status*. This means health insurance is something essential and not wasted even if *ex post* an individual has used little or no health care, and even for someone with little *ex ante* expected health care usage. This approach has philosophical and political implications to which some may object.

In contrast to our approach, the NAS panel conceptualized health needs as a need for *care*. It noted that the need could be met through health insurance, as well as through payment for care, but the fundamental need was for care. Indeed, the Report implied that health insurance was wasted if, *ex post*, the individual did not need health care: “someone in a high-risk health category may have a good year and need only minimal medical care, but no one can have a year in which he or she does not need to eat” (p. 235). Even Moon (1993), who was concerned that the poverty measure be sensitive to the value of health insurance in meeting needs and reducing poverty, conceptualized the need as care, not insurance. However, like fire insurance, which has value even if there is no fire, health insurance is valuable no matter the outcome in any period (Blinder, 1985).

The panel also tied this issue to fungibility when it wrote, “the ‘extra’ benefits received from insurance (or free care) to cover, say, expensive surgery are not likely to free up money commensurately” (p. 68). Essentially they are comparing two individuals with limited means: one who has insurance and one who does not, both of whom have a condition that would benefit from surgery. The covered individual receives expensive surgery, aiding his health. The uncovered individual does not have sufficient funds to pay for the surgery. The uncovered individual would likely have to do some of the following: go without surgery (common for cancer), receive free care (common for heart attack or trauma, conditions for which hospitals are required to treat patients irrespective of ability to pay), use up available assets, or go into debt. In many of those scenarios, having surgery paid for by insurance does not “free up money commensurably,” because, in the counterfactual (uninsured) situation, the individual would not have had sufficient resources to pay for the surgery. But if we view health insurance as a basic

need, then being provided insurance frees up funds that would have been needed for insurance premiums.

Considering care, rather than insurance, to be the fundamental need is understandable. Poverty is not having sufficient resources to maintain health and well-being and care can be obtained through means other than insurance. We believe, however, that insurance should be considered a need. First, although obvious, it is worth stating that health care is largely obtained through insurance. Second, for the elderly we have recognized this need and, since 1965, have increasingly met it, through public insurance. Third, for poor children (and many of their parents) and pregnant women we have recognized and implemented this need through Medicaid. Fourth, with the ACA, we have recognized this need for all poor adults and for nearly the entire citizenry.<sup>23</sup> Fifth, the NAS panel clearly wished to include health in poverty measurement if it were feasible to do so, but they could not solve the problems of assigning needs and valuing health for practical reasons. We have shown that solving those problems is feasible (under certain insurance system conditions) by conceptualizing the need as a need for insurance—a practical argument.

#### **IV. Implementing a HIPM**

*Will the conditions be met for the non-elderly in 2014?*

Recall our conditions for construction of a HIPM are that the system makes available to everyone a BCP with the following features: (1) All necessary care (as defined by society) is covered. (2) Premium MOOP is not-risk-rated. (3) Non-premium MOOP is capped. To what extent will the conditions for the non-elderly be met in 2014 when the main ACA features are implemented?

The full implementation of the ACA involves two major kinds of change: Medicaid expansion and a cluster of insurance reforms: a mandate to purchase health insurance, income-based subsidies for both premiums and cost-sharing, insurance exchanges for those not eligible for Medicaid, and others (Focus on Health Reform, 2011a).

For those who will be provided Medicaid, all conditions are clearly met. The HIPM is implemented for the vast majority of the Medicaid eligible by adding the same dollar amount to resources and needs (i.e., their health insurance needs are fully met). For those who are Medicaid eligible but required to pay premiums (e.g., qualified disabled persons and working individuals with income above 150% of the poverty line in states that charge such persons premiums), required premiums are subtracted from resources. For those who are Medicaid-eligible but do not report being covered by Medicaid, we nonetheless treat their health insurance needs as fully met.<sup>24</sup>

Those who are not Medicaid-eligible will have access to plans on the exchanges. All three conditions are basically met by the exchanges. First, the exchange plans will cover all essential care, as determined by social norms, the political process and the medical profession. Second, premium MOOP cannot be tied to health status but may be tied to age, with a maximum variation of 3 to 1.<sup>25</sup> Third, non-premium MOOP is capped according to the maximum for the high-deductible plan associated with a Health Savings Account (HSA), which is roughly \$6,000 for an individual. Some plans may, of course, have lower non-premium MOOP caps. For those with income below 400% of the poverty line, the cap is reduced according to a sliding scale based on income (Focus on Health Reform 2011a, 2011b) enabled through government cost-sharing subsidies. For example, for incomes up to 200% of poverty, the maximum is one third of the HSA maximum, now around \$2,000.<sup>26</sup>

With the exchanges, identifying the BCP is relatively easy. Premium information is readily available to both the agency responsible for measuring poverty and to households making plan choices: the exchanges have all necessary information about premiums and caps. Required premium MOOP—and thus implicit government subsidies—depend on income and are clearly specified in the legislation through a premium schedule. Thus, the age and income information in the CPS (Current Population Survey) or other surveys, the premium MOOP schedules in the legislation, and the insurance plan features posted in the exchanges provide everything required for construction of a HIPM. Since among exchange plans premiums will be traded off against both the level and form of cost-sharing, as well as other plan features, identifying the

BCP still involves some judgment. However, since much of the ACA legislation uses the “second cheapest silver plan” as a benchmark, it could be considered the BCP.

Using the ACA legislation, and the premiums observed on the exchanges (and thus plan full costs), HIPM calculation is straightforward. Consider a family of four with income of 28,600 (1.33 times the 2010 OPM threshold of about \$22,000) that purchases insurance in the exchange and receives the government subsidies of the ACA. Suppose that the plan full cost is \$15,000. (We would observe it, in fact, as the market premium for the second least expensive silver plan in the exchange in the household’s state of residence.). The HIPM needs threshold for the family would therefore be \$37,000 (\$22,000 plus \$15,000).

The family’s resources are their income plus the plan full cost minus their legislatively-specified premium MOOP minus their actual non-premium MOOP up to the income related cap (determined indirectly through the legislation’s actuarially defined, income-based cost-sharing subsidies). The non-premium MOOP cap for a family at this income level is \$4000 (one third of the HSA maximum, as estimated by Kaiser 2011). The required premium MOOP is 3% of income, or \$858. To summarize:

$$\text{Resources} = \text{Income} + (\text{Plan Full Cost for BCP} - \text{required premium MOOP}) - \text{actual non-premium MOOP (up to cap)}$$

If the family spent the maximum possible non-premium MOOP of \$4000, their resources would be  $\$28,600 + (\$15,000 - \$858) - \$4000 = \$38,742$ , a bit above the \$37,000 HIPM threshold.<sup>27</sup>

Our HIPM approach can also be calculated for low-income individuals who receive employer-provided health insurance, even when that health insurance has substantial premium MOOP and/or non-premium MOOP maxima. We simply use the actual premium MOOP and non-premium MOOP of the employer provided insurance, but cap deductions for both at the premium and non-premium MOOP available to that individual on the exchange, and use the plan full cost of the BCP on the exchange for the HIPM threshold.

We treat those eligible for subsidies for use in the exchanges but who choose to remain uninsured (and pay penalties) as having their needs met through the subsidies and exchanges.

Undocumented immigrants, however, are not eligible for the exchanges. It is the universal availability of the exchange and its subsidies that justifies the HIPM calculations. Therefore, we will not be able to calculate a HIPM for undocumented persons and others who are not eligible for a BCP.<sup>28</sup>

*Are the conditions met for the elderly today?*

To what extent are the conditions met for the elderly today? Traditional fee-for-service Medicare had many of these characteristics—universal availability of plans with non-risk rated premiums—but not all: prescription drugs were not covered until Part D was implemented in 2006, and cost-sharing is not capped and can be substantial. However, today’s Medicare Advantage–Part D (MA-PD) plans meet nearly all the HIPM criteria. These plans cover all necessary care, including prescription drugs, and generally vision and dental. Their premiums are not risk rated. As of 2011, (non-premium) MOOP for all medical care provided by MA and MA-PD plans is capped at \$6700 (the 95<sup>th</sup> percentile in costs in the traditional Medicare fee-for-service) and CMS encourages plans to make the cap \$3400, the 85<sup>th</sup> percentile in the traditional Medicare program (Biles, Nicholas and Guterman 2006).

The only shortcoming of present MA-PD plans relative to the ideal BCP is the lack of an explicit cap on prescription drug non-premium MOOP spending. (The Federal government funds and regulates the prescription drug coverage part of MA-PD plans separately, as part of the Part D benefits.) However, several features of the plans and of Federal government reduce prescription drug non-premium MOOP and create virtual *de facto* caps. First, for all beneficiaries, once the catastrophic level of nonpremium MOOP is reached (currently \$4700), cost-sharing is substantially reduced (MedPAC, 2012). Second, the Medicare Part D low income subsidy program reduces or eliminates cost-sharing for Medicare beneficiaries with low income and low assets (Summer, Hoadley and Hargrave, 2010). Third, many MA-PD plans offer “enhanced” prescription drug coverage that eliminates the deductible and substantially reduces co-pays, particularly for generic drugs, meaning high prescription drug expenditures are, to some extent, discretionary. Finally, in future years, even conventional Part D plans will reduce

the extensive prescription drug coverage cost-sharing in the “donut-hole,” so we expect MA-PD enhanced coverage could have even less cost-sharing (Focus on Health, 2011).

Thus, while present prescription drug coverage for the elderly is not quite complete, the elderly have plan choices available that make significant non-premium MOOP expenditures on prescription drug coverage largely discretionary, particularly for those with low income. Because tail-risk has been and will continue to be reduced, several HIPM approaches to treating prescription drug non-premium MOOP are available. For example, prescription drug non-premium MOOP could be added to FCSU distribution (as for HIPM-c). The smaller the tail risk, the better this option. Alternatively, a HIPM-a could be implemented with a somewhat arbitrary, and income-dependent, cap for prescription drug non-premium MOOP.

A further difficulty is identifying which of the MA-PD plans should be regarded as “the” BPC. The terms and features of MA-PD plans vary considerably. Plans may trade-off premium MOOP and non-premium MOOP. Major metropolitan areas have plans with little or no premium above the Part B premium and little, if any cost-sharing. For example, New York City (NYC) has MA-PD plans with: no premium MOOP above the Part B premium (now roughly \$1200 per year); the recommended \$3400 cap on medical non-premium MOOP; and very limited cost-sharing terms (no co-pays for medical care, no deductibles, and small co-pays for prescription drugs).<sup>29</sup> Since these NYC plans with their low premium MOOP match well our theoretical ideal of a basic capped plan, we will use NYC figures for our examples and illustrative calculations for the elderly. However, not all areas have such generous plans and some rural areas have no HMO MA-PD plans but only PPO or fee-for-service plans.

Once the BCP is identified for an elderly individual, how would the poverty calculation proceed? First, we must determine the plan full cost, including the government contribution. Since our approach bases the plan full cost on a broad population with all health statuses and since actual government contributions to MA-PD plans reflect positive selection (Brown et al, 2011), we would simply use total government Medicare expenditures on the elderly divided by total elderly Medicare beneficiaries, as the government contribution to plan full cost. This amount is now approximately \$10,000.<sup>30</sup> To determine plan full cost, we add to the government



contribution the premium MOOP enrollees must pay, which depends on the plans available. For NYC, required premium MOOP for the BCP is only the \$1200 Part B premium. Thus, the plan full cost would be \$11,200. If the HIPM is built from the SPM, then the HIPM poverty threshold for an elderly person is the SPM threshold, approximately \$10,000 for a single person,<sup>31</sup> plus the \$11,200 plan full cost, for a total of \$21,200.

To calculate resources, we could begin with the SPM measure (pre-MOOP deduction), but add the value of government insurance provided, \$10,000. Treatment of non-premium MOOP should separate prescription drug and medical non-premium MOOP, since the caps do. For a HIPM-a, we would limit the deduction for medical non-premium MOOP to the \$3400 cap. Thus, resources for an elderly person with \$15,000 of income and \$5000 in medical non-premium MOOP would be  $\$21,600 = \$15,000 + \$10,000 - \$3400$ . Since her resources exceed the HIPM poverty threshold of \$21,200, she would not be poor. In this calculation, we have ignored prescription drug non-premium MOOP. This could be handled by increasing the poverty threshold by adding it to the FCSU threshold (possibly age-adjusted), or by giving it its own cap. Setting a specific cap for prescription drug non-premium MOOP will require further investigation.

Two further complications come to mind: employer-provided supplementary insurance and Medicaid as supplementary insurance. Since employer-provided supplementary insurance creates an alternative to MA-PD plans often without providing as complete insurance, it is difficult to incorporate in resources and we do not do so.<sup>32</sup> Regarding Medicaid as supplementary insurance, some might argue that, by definition, anyone eligible for Medicaid is poor. However, like the SPM, the HIPM is a post-transfer (including health insurance) poverty measure. Therefore, it is appropriate to include the value of Medicaid in resources for calculation of the HIPM.<sup>33</sup> Most elderly Medicaid beneficiaries pay no premium MOOP for Medicaid, and Medicaid pays their Medicare Part B premiums.<sup>34</sup> For such beneficiaries, their health needs are fully met by the government program and therefore the amount added to resources should be equal to their full health insurance needs. For those Medicaid beneficiaries

who pay some premiums, such as the Medically Needy in some states, resources are equal to their health insurance needs minus their required premium MOOP payments.

Several objections could be made to applying this approach today. First, studies characterizing MOOP expenditures among the elderly, even among MA-PD plan members, show substantial MOOP (e.g., Biles, Nicholas and Guterman 2006). But the actual MOOP of the elderly is not relevant; what matters is their MOOP had they chosen the BCP. Second, choosing among many plans is a cognitively difficult task, particularly for elderly with some cognitive impairment (McWilliams et al. 2011). This is not a conceptual objection to the HIPM, but rather a pragmatic concern. Moreover, this problem has a policy implication: if we are concerned about impoverishment from high MOOP expenditures due to poor plan choice among cognitively impaired (or misinformed) persons, the government should make the basic capped plan the default choice, warning those who would select another plan that they face greater MOOP risk. Third, the non-premium MOOP cap is still quite high, often \$3,400 and possibly as high as the legal maximum of \$6,700. A cap this high raises the possibility of “discretionary” expenditures below the cap. Even if this case, the cap would reduce but not eliminate this source of bias in the SPM.<sup>35</sup>

#### *How much does a cap on MOOP deductions affect elderly poverty rates?*

Implementing the HIPM is a major undertaking, beyond the scope of this paper. For example, it requires identifying a BCP for each person in the sample and (for the elderly) separately identifying prescription drug and medical non-premium MOOP, which is currently not done in the CPS SPM supplement. To get a sense of the potential effects of implementing a HIPM, we test the sensitivity of the elderly poverty rate to capping the MOOP deduction. For an estimate based on a HIPM-d, we allow no non-premium MOOP deduction and cap the MOOP deduction at the required premium MOOP (\$1200). For an estimate based on a HIPM-a, we cap the MOOP deduction at \$4600, the sum of the premium MOOP (\$1200) and the non-premium medical MOOP cap (\$3400).<sup>36</sup> We used the IPUMS March CPS files (Ruggles et al. 2010) for the Census Bureau’s 2011 SPM calculations for all elderly persons. For simplicity, we focus most of our analysis on a sub-sample of households consisting of one or two elderly persons.

The SPM poverty rate is 15.9% for the elderly population as a whole and also for elderly persons who live in 1- or 2-person households with no non-elderly persons (See Exhibit 5, first and second rows). When we cap MOOP deductions at the \$1200 per person Part B premium, the elderly SPM poverty rate falls 5.5 percentage points, from 15.9% to 10.4% (fourth row). This approach is analogous to the HIPM-d, a lower bound, which allows no non-premium MOOP deduction. Next, to simulate a more generous approach (analogous to HIPM-a), again for areas such as NYC, we capped deductions at \$4600 (\$1200 for the premium plus \$3400 for the medical non-premium MOOP cap), resulting in an elderly poverty rate of 14.1%--a 1.8 point reduction (fifth row). While these are only illustrative calculations, they show the potential for capping MOOP deductions to have a substantial effect on elderly poverty. These calculations suggest that the SPM's unlimited MOOP deductions may overstate elderly poverty by up to 50 percent.<sup>37,38</sup>

**Exhibit 5: SPM Elderly Poverty Rates in 2010**

Sample	Poverty Measure	Poverty Rate (%)	Sample Count
All persons 65+	SPM	15.9	21,946
Persons 65+ in SPM resource-sharing units of 1 or 2 persons aged 65 or older	SPM	15.9	14,800
	SPM, no MOOP deduction	7.9	14,800
	SPM, MOOP capped @ 1200/person	10.4	14,800
	SPM, MOOP capped @4,600/person	14.1	14,800

*Source: Authors' calculations from the IPUMS March CPS file, 2011 (Ruggles et al. 2010), SPM weights.*

*Validity of the SPM MOOP deduction: How poor are those with high MOOP?*

We next examined the validity of the SPM practice of deducting MOOP expenditures from resources without limit. We focused on elderly persons classified as SPM poor due to the MOOP deduction. Among this group, we compare poverty-related characteristics of those who

remain poor even when their MOOP deduction is capped—the “Not Capped Out”—to those who are “Capped Out” of SPM poverty when we cap the MOOP deduction. We present results for the two caps described above: \$4,600 per person and \$1,200 per person, corresponding, respectively, to the Plan B premium plus MA-PD medical non-premium MOOP limit for NYC and the Plan B premium. If those “Capped Out” of poverty look considerably advantaged compared to other poor elderly, this suggests low validity for the unlimited MOOP deduction. These validity checks are in the spirit of those conducted by Jencks and Torrey (1988), Meyer and Sullivan (2012) and others, although their concern is not the validity of the uncapped MOOP deduction in the SPM. We also describe characteristics of the elderly who are SPM-poor even before MOOP expenditures are deducted from income. We performed these analyses separately for one-person and two-person elderly households. We emphasize that this exercise is intended to demonstrate the effect of limiting MOOP deductions for the elderly, and is not a comparison of a fully-implemented HIPM to the SPM.

Exhibit 6A presents results for the higher MOOP cap. Clearly, those “Capped Out” of SPM poverty by capping MOOP at \$4,600 per person are far better off than the “Not Capped Out” according to a variety of indicators (comparing the second to the third column or the fifth to the sixth column). Not surprisingly, among two-person elderly households, the Capped Out average much higher income, \$29,928 in SPM non-health resources (first row), over twice the SPM poverty threshold, compared to \$18,884 among the Not Capped Out. Perhaps surprisingly, what most distinguishes the Capped Out from the Not Capped Out is their high rates of coverage by private health insurance: 82% of two-person elderly households are privately insured among Capped Out compared to 62% among Not Capped Out and 37% among those poor before MOOP deductions (column 4). Among one-person elderly households, the figures are 78%, 51% and 34%, respectively. The high rate of private insurance among those classified as SPM poor as a result of MOOP deductions is consistent with the interpretation that those who are better off purchase better insurance (e.g., privately purchased Medigap) or purchase more or better medical care, induced by better insurance.

**Exhibit 6A: Effect of Capping MOOP Deductions at \$4,600 per person**

*Means or Proportions (% unless indicated) for Households of One or Two Persons Aged 65 or older*

	One-Person Households			Two-Person Households		
	SPM Poor, Pre-MOOP Deduction <sup>1</sup>	SPM Poor Due to MOOP Deduction		SPM Poor, Pre-MOOP Deduction <sup>1</sup>	SPM Poor Due to MOOP Deduction	
		Not Capped Out <sup>2</sup>	Capped Out <sup>3</sup>		Not Capped Out <sup>2</sup>	Capped Out <sup>3</sup>
SPM Total Resources, Before MOOP Deduction (\$)	7,031	12,180	19,390	9,051	18,884	29,928
SPM Threshold	10,974	10,518	10,749	15,750	14,888	14,030
MOOP (\$)	1,666	3,614	13,936	4,018	11,938	22,884
Capped MOOP (\$)	755	3,036	4,600	1,599	6,517	9,200
Covered by Private Insurance <sup>4</sup>	33.9	51.0	78.3	36.8	61.8	82.1
Covered by Group Insurance <sup>4</sup>	15.3	12.5	21.6	15.7	17.7	31.7
Medicaid	19.8	15.6	1.8	23.0	4.9	0.0
Medicare	90.0	98.2	98.2	89.6	98.4	97.0
Public housing or rental subsidy	6.2	16.3	7.7	2.6	4.6	0.0
Heat subsidy	5.7	10.6	5.2	4.0	5.3	2.1
Food Stamps (SNAP)	11.8	14.2	3.8	12.2	3.8	0.0
SSI	6.4	5.7	0.0	9.2	3.1	0.0
Interest/Dividend income (\$)	163	255	967	350	708	2,114
Any other pension / source of retirement income <sup>5</sup>	6.2	12.1	17.5	8.6	9.7	30.0
Any business or rental income?	3.1	7.1	10.2	8.9	5.6	14.6
Mortgage Status						
Rent	37.2	37.5	33.2	24.7	13.7	5.7
Own w/mortgage	18.9	13.5	14.0	21.8	24.9	22.1
Own, no mortgage	43.9	48.9	52.8	53.4	61.4	72.2
Female	72.1	82.3	80.0	51.2	50.3	51.4
Age (years)	76.2	76.8	77.7	75.3	76.4	74.6
Black racial identification	18.7	12.5	7.0	8.6	8.1	1.6
Number of observations	855	494	110	431	422	154

Source: Authors' calculations from IPUMS March CPS files, 2011 (Ruggles et al. 2010), SPM weights.

1. SPM-poor, even if MOOP expenditures are not deducted from resources.
2. SPM-poor if MOOP expenditures are deducted from resources, even when the MOOP deduction is capped at \$4600/person.
3. SPM-poor if all MOOP is deducted from resources but not if the MOOP deduction is capped at \$4600/person.
4. Private: either individually purchased (usually Medigap) or employer-provided (usually supplemental). "Group" is private insurance provided by a group, usually an ex-employer.
5. Any other pension/ source of retirement income: company, union, federal, state or local government pension; regular payments from an annuity, IRA, KEOGH, or 401K, etc.

The “Capped Out” do not look particularly disadvantaged in other dimensions. For example, among two-person households, the Capped Out report virtually no means-tested assistance (Medicaid, housing, Food Stamps, or SSI), 72% own their own homes outright, and they report over \$2,000 of asset/dividend income, on average, even though asset (and other) income is known to be underreported. Given the low interest rates that prevailed in 2010, \$2,000 of income would indicate ownership of financial assets valued at \$50,000 to \$100,000, or more.

Although “capped out” single persons (column 3) look similarly well-off, with mean SPM resources of \$19,390, 78% privately insurance coverage, and high rates of home ownership and asset income, they are slightly more likely than 2-person Capped Out households to report receipt of means-tested assistance (e.g., 3.8% report Food Stamp receipt and 7.7% live in public or subsidized housing).

Exhibit 6B presents results for the lower, \$1200 cap, analogous to HIPM-d. This represents a more conservative validity test since a lower cap should make the Capped Out group appear less advantaged. Nonetheless, especially among 2-person households, when the MOOP deduction is capped at \$1,200 per person, those removed from SPM poverty continue to appear relatively advantaged. Nearly three quarters are covered by private health insurance, compared to 37 and 44 percent among the other two groups of SPM poor elderly couples. Similarly, about two-thirds of single-person elderly households who are Not Capped Out by the \$1,200 cap have private health insurance, compared to roughly one third of other single-person households.

**Exhibit 6B: Effect of Capping MOOP Deductions at \$1,200 per person**

Means or Proportions (% unless indicated) for Households of One or Two Persons Aged 65 or older

	One-Person Households			Two-Person Households		
	SPM Poor, Pre-MOOP Deduction <sup>1</sup>	SPM Poor Due to MOOP Deduction		SPM Poor, Pre-MOOP Deduction <sup>1</sup>	SPM Poor Due to MOOP Deduction	
		Not Capped Out <sup>2</sup>	Capped Out <sup>3</sup>		Not Capped Out <sup>2</sup>	Capped Out <sup>3</sup>
SPM Total Resources, Before MOOP Deduction (\$)	7,031	11,139	14,948	9,051	16,932	23,452
SPM Threshold	10,974	10,519	10,586	15,750	15,615	14,345
MOOP (\$)	1,666	2,513	7,353	4,018	5,671	17,881
Capped MOOP (\$)	755	1,132	1,200	1,599	2,307	2,400
Covered by Private Insurance <sup>4</sup>	33.9	36.3	67.6	36.8	44.4	74.7
Covered by Group Insurance <sup>4</sup>	15.3	13.1	14.9	15.7	7.8	25.9
Medicaid	19.8	19.5	8.0	23.0	8.6	2.0
Medicare	90.0	96.4	99.2	89.6	97.1	98.3
Public housing or rental subsidy	6.2	19.6	11.8	2.6	9.7	1.3
Heat subsidy	5.7	9.9	9.4	4.0	10.4	2.5
Food Stamps (SNAP)	11.8	15.9	10.1	12.2	7.8	1.2
SSI	6.4	9.2	2.0	9.2	5.9	1.1
Interest/Dividend income (\$)	163	147	532	350	285	1,347
Any other pension / source of retirement income <sup>5</sup>	6.2	7.1	16.6	8.6	2.8	19.1
Any business or rental income?	3.1	6.4	8.5	8.9	2.3	9.8
Mortgage Status						
Rent	37.2	39.0	35.4	24.7	18.6	9.2
Own w/mortgage	18.9	12.7	14.2	21.8	30.8	22.0
Own, no mortgage	43.9	48.3	50.4	53.4	50.6	68.8
Female	72.1	81.4	82.1	51.2	51.3	50.3
Age (years)	76.2	75.7	77.7	75.3	76.3	75.8
Black racial identification	18.7	16.9	8.3	8.6	11.9	4.5
Number of observations	855	224	380	431	150	426

Source: Authors' calculations from IPUMS March CPS files, 2011 (Ruggles et al. 2010), SPM weights.

1. SPM-poor, even if MOOP expenditures are not deducted from resources.
2. SPM-poor if MOOP expenditures are deducted from resources, even when the MOOP deduction is capped at \$1200/person.
3. SPM-poor if all MOOP is deducted from resources but not if the MOOP deduction is capped at \$1200/person.
4. Private: either individually purchased (usually Medigap) or employer-provided (usually supplemental). "Group" is private insurance provided by a group, usually an ex-employer.
5. Any other pension/ source of retirement income: company, union, federal, state or local government pension; regular payments from an annuity, IRA, KEOGH, or 401K, etc.

While these analyses incorporate only one feature of a HIPM (capping MOOP) and do not attempt to determine the drivers of the high MOOP expenditures of the Capped Out,<sup>39</sup> they suggest that capping MOOP deductions can improve validity. Interestingly, especially among one-person households and with the lower cap value, the Not Capped Out in some respects appear more disadvantaged than those “SPM Poor, pre-MOOP Deduction” (for example compare Food Stamps/SNAP, SSI and interest/dividend income across the first two columns of Exhibit 6B). This pattern likely reflects underreporting of income, particularly among widows (Hurd and Rohwedder, 2006), that can cause those classified as “deep poor” by the SPM (having resources less than half the poverty line) to appear better off than the SPM-poor as a whole (Meyer and Sullivan, 2012).

## **V. Discussion: Caveats, Critiques and Ambiguities**

The foregoing discussion has pointed the way toward a measure of poverty that includes health (insurance) in both the thresholds and in resources, a HIPM. Although we believe a HIPM represents an improvement over the SPM and OPM, ultimately that judgment rests on empirical predictive validity evaluations such as those conducted for the OPM. And, although we believe the advantages of the HIPM outweigh the disadvantages, we should not overlook its potential weaknesses. Awareness of weaknesses will guide revision of the HIPM and the interpretation of statistics that involve the HIPM. Some weaknesses are specific to a HIPM while others are shared by the OPM and SPM. We discuss five priority issues: 1. Discretionarity of non-premium MOOP; 2. Independence of insurance value and health status; 3. Savings/assets; 4. long-term care and over-the-counter medications; 5. *Ex-ante* vs. *ex-post* perspectives in poverty measurement.

### *Is non-premium MOOP nondiscretionary?*

Central to our proposed HIPM is individual choice among insurance options, specifically the idea that MOOP expenditures that result from the choice of plans other than the BCP are discretionary. We postponed our discussion of the discretionarity of health *care*, which, philosophically and empirically, determines the merits of the various approaches to non-premium MOOP in poverty measurement.



While almost everyone considers some health care discretionary and some care non-discretionary, perspectives vary on the quantitative importance of discretionary care. The NAS panel's discussion represents one extreme in the treatment of care as nondiscretionary, citing as examples of discretionary care, "elective cosmetic surgery...extra laboratory tests or ineffective drugs" (p.232). This extreme regards nearly all care to be essential or at least largely outside of an individual's control (footnote 29, p. 236). At the other extreme, in his dissent Cogan advocates a consumer choice approach to health care and describes "health as an economic good, responsive to both income and price changes," citing work by health economists Pauly, Grossman and Newhouse. Indeed, in an economic framework, it makes little sense to describe anything as essential without specifying the outcome for which it is essential. We recognize that not only does insurance involve choice but that some health care decisions are choices made by individuals based on preferences, income, wealth and price. And we know of no generally accepted conceptual description of socially defined medical care needs, above which care will be deemed "discretionary."

The following suggest that relatively little health care is discretionary to individuals. First, the Rand Health Insurance Experiment estimated that the overall price elasticity of health care is -0.2—relatively inelastic (Newhouse and the Insurance Experiment Group, 1993). However, as Aron-Dine, Einav and Finkelstein (2012) caution, there is greater uncertainty surrounding these elasticity estimates than is generally appreciated. Second, only certain forms of health care (such as initial doctor's visits) and certain kinds of individuals respond elastically to price (Remler and Greene, 2009). Third, physicians and other providers largely drive health care decisions (e.g., Wennberg et al. 2002); individuals may have little control or information for making decisions.

Although a particular instance of health care might not be discretionary to individuals, it may still be discretionary from the perspective of societal resource allocation if it does not, in expectation, improve health or does not improve health sufficiently to justify its cost. Wennberg *et al.* (2002) suggest that there is a significant amount of such care. It is quite possible, therefore, that our ideal BCP for a HIPM would be less generous than even the least

expensive MA-PD plans. However, determining ideally covered care, even conceptually, is difficult since basic health care needs must inevitably be defined socially and politically, and will be ever changing due to advances in medical technology. While health plans can define and enforce standards through coverage policies, utilization management and other cost containment techniques, government will need to play a role, perhaps through cost-effectiveness studies and regulation, in ensuring that truly basic plans exist. Although this is an important issue for resource allocation, between elderly and non-elderly, between health care and other goods, it cannot be addressed through poverty measurement.

Still, we believe that the amount of basic care, however defined, in both the BCP and other plans, determines the best approach to non-premium MOOP. HIPM-a, in deducting all non-premium MOOP below the cap of the BCP, leads to an overstatement of poverty. However, the extent of overstatement must be reduced relative to the SPM. As our preliminary analysis showed, even using a relatively generous cap reduces the measured elderly poverty rate by 1.8 percentage points.

#### *Insurance value independent of health status*

Our proposed HIPM would use a health insurance needs threshold that does not vary with health status. An objection is that the value of health insurance greatly depends on health status. However, as a practical matter, it is not value that should determine the poverty threshold but price—what the individuals must pay. Food is more valuable to someone who is hungry, but we do not vary the food needs threshold, because the price of food does not vary with hunger. Moreover, the cost of food also does not vary with hunger. But since sicker people use more health care, the cost (actuarially fair premium) of their insurance is higher. If the differences in costs are reflected in differences in prices (premiums) paid by individuals, as they are today for many non-elderly, then the threshold should vary. However, if premiums are not risk rated then the poverty threshold need not vary.<sup>40</sup>

### *Saving, Assets, Retirement and MOOP*

The empirical evidence reviewed earlier in this paper demonstrates both that, on average, the elderly have substantial assets (net worth), and that they use those assets to avoid material hardship and to fund MOOP expenditures. Yet neither the OPM, SPM nor the different versions of the HIPM counts assets as resources. As noted, HIPM-a allows substantial non-premium MOOP deductions, and therefore may suffer from the same bias as the SPM but to a lesser extent. While deducting MOOP upwardly biases the poverty rate and not counting assets exacerbates this bias, particularly for the elderly, including assets in resources is difficult for both practical and conceptual reasons. People of all ages need savings for precautionary reasons. Indeed, the exclusion of assets from resources for the non-elderly may reflect a norm that younger people must save for retirement and other purposes, and therefore face a hardship if they cannot meet basic needs from current incomes. However, we would argue that the corollary to a normative “need” to save for old age expenses when young is an expectation to meet some basic needs in old age by drawing down those savings. Thus, the elderly would not necessarily be poor simply because their current income net of MOOP expenditures falls below the poverty line if their savings are adequate. Perhaps reflecting these norms, the ACA’s new eligibility rules for Medicaid eliminated the asset test for the non-elderly while maintaining it for the population over age 65.

As noted, arguments for accounting for assets in poverty measurement have gained prominence recently (Stiglitz, Sen and Fitouzzi, 2009). How best to do so is a subject of continuing research and no consensus exists (Brandolini, Magri and Smeeding 2009). Three possibilities come immediately to mind, although others are possible: (1) Count all assets as fully available in any period. Once assets are exhausted, the only resource available to meet basic needs is income. (2) Calculate an annuity equivalent of assets, based on life expectancy, with perhaps a margin of error for longer life and precautionary savings. This approach converts assets into a flow that is larger than the annual income flow from the assets since the principle would be drawn-down and, on average, depleted by the end of life. Brandolini, Magri and Smeeding (2009) call this the “income net-worth concept,” which they attribute to Weisbrod

and Hansen (1968). However, they hesitate to recommend this option because: “We might be reluctant to impose so much structure on the measurement, especially when we take into account the profound implications that such a measure has for the age structure of poverty. Accumulated assets at older ages with a shorter annuity horizon increase the income net worth of the elderly as compared to younger person with longer time horizons and fewer accumulated assets.” However, we believe that decision to use the income net-worth approach should rest on predictive validity including whether the resulting age structure of poverty more accurately describes the true ability to meet needs at different ages. (3) Do not count assets.

Although options (1) and (3) are upper- and lower-bounds for counting assets as resources available to meet basic needs, more research is needed on this topic. At this point, we simply note that ignoring assets in poverty measurement amounts to a normative position that the elderly should be able to meet their basic needs from current income, despite having accumulated assets during their working lives for the express purpose of meeting needs in old age. As we noted, using the SPM procedures, greater assets can make one poorer by allowing higher expenditures on MOOP. If one takes this approach to its logical conclusion, one might argue that, if government’s role is to fight poverty, then government should protect the elderly from having to use savings to meet basic needs including health needs. Setting eligibility standards for public assistance accordingly, the result would be to make eligible for means-tested assistance elderly persons who were rich and middle-class on a lifetime basis, even if they continue to have substantial savings in old age. Such eligibility standards would, in effect, transfer income from the average taxpayer to the asset-rich elderly, protecting not only their assets but the fortunes of their heirs. Arguably, this is not an appropriate objective for means-tested assistance programs. Recognizing this, our safety-net programs for the elderly (Medicaid, SSI) include asset tests for eligibility. If including an asset test reflects social norms about need, then perhaps our poverty measure should do the same.

#### *Long-term care and over the counter drugs*

The SPM implementation of MOOP deductions does not include long term care (LTC) expenditures (Short 2012). Much LTC, whether at home or in an institution, consists of help

with personal care and housekeeping. As such, quality can vary just as with any service or amenity. One would expect, therefore, that the scope for discretionary LTC is great. Indeed, Marshall, McGarry and Skinner (2011) find that LTC is highly wealth elastic. On the other hand, LTC can certainly be essential and a basic need for those unable to care for themselves. So, not including LTC in the threshold or deductions understates poverty. Nonetheless, we agree with the SPM treatment of LTC. Not only is much LTC discretionary, but long-term care is provided through Medicaid for low-income elderly persons, subject to an asset test. Arguably, Medicaid is available to remove from poverty those who would fall into (pre-transfer) poverty as a result of basic long-term care needs.

On the other hand, the SPM MOOP implementation includes spending on over the counter (OTC) drugs. While some OTC drugs may clearly be essential (e.g., children's acetaminophen), others are not. Moreover, since spending on OTC drugs is not likely to be skewed or even very high variance, it might be best to incorporate them into the HIPM by including them in an expanded FCSU threshold (FCSUO for OTC medications).

#### *Ex post Poverty Measurement Only?*

The HIPM includes the price of the capped basic health insurance plan in both the resource measure and the threshold. All HIPMs, even the most generous, HIPM-a, do not allow unlimited deductions of MOOP from resources. Someone who has extensive MOOP because they unwisely (in retrospect) did not choose the BCP might not be counted as poor under the HIPM but would be under the SPM. Betson (2000) has argued that, in this case, the SPM approach is correct since poverty measurement should take an *ex post* perspective. For example, he notes, poverty measures take the number of children in a family as "given" in poverty measurement (p. 14) so that families with many children and low income are considered poor even if their income would allow them to escape poverty had they chosen to have fewer children. Similarly, such measures consider a family with unemployed members poor even if it would not be poor had they worked (p. 15). By analogy, he argues, poverty measures should deduct MOOP expenditures from income *ex post* because, at that point, families with high MOOP expenditures will have less to spend on FCSU.

However, it is unclear that the examples of unemployment and large families provide an analogy useful for thinking about the treatment of health insurance as a need and resource in a HIPM. First, the analogy to family size is inappropriate because government does not offer families the option to buy highly subsidized insurance that would protect them from impoverishing themselves through “excessive” childbearing. And while the SPM subtracts MOOP from resources, it does not subtract out-of-pocket expenditures related to other insurable events such as damage to a family’s house from fire or water, or damage to their cars from traffic accidents. Instead, it takes an *ex ante* perspective (at least in principle) by including the cost of home insurance as a shelter expense in the FCSU threshold, and the cost of automobile insurance in the “1.2 multiplier” of FCSU intended to capture necessary transportation expenses. In these cases, if a family has sufficient income to cover fire and auto insurance expenses, they are not counted as poor even if an event occurs that requires the family to pay a substantial amount out of pocket because they were uninsured or underinsured. So it is not true that the SPM (or OPM) consistently takes an *ex post* perspective.

Nonetheless, we understand that some will object to our taking an *ex ante* (insurance) perspective. The most obvious objection is that the HIPM will not measure hardship among people who fail to take advantage of opportunities to substantially reduce the risk of high MOOP expenses. Yet if they had resources sufficient to purchase the BCP and the plan was available to them, and if that purchase would have allowed them to avoid substantial MOOP expenses and therefore escape poverty, can we say that they lacked adequate resources to meet their basic needs? In SPM poverty measurement, no one monitors whether families actually spend their income on FCSU items up to the FCSU poverty threshold, only whether they have resources sufficient to do so.

Any disadvantage in taking the *ex ante* insurance perspective must be weighed against the ability to value the benefit of public and private health insurance as a resource, to show their impacts in reducing poverty, and to have poverty thresholds that reflect health (insurance) needs. The HIPM also has the advantage of reducing the distortion in the SPM caused by the combination of a failure to count assets as resources and the deduction of all MOOP from

annual income. Finally, recognizing the cognitive and other difficulties in making health insurance choices and borrowing on the insights from behavioral economics, rather than change the poverty measure to recognize shortsighted decisions, we would advocate making the low MOOP-risk insurance option (i.e., the BCP) the default plan choice in Medicaid and, at least for lower-income persons, in Medicare and ACA insurance exchanges.

## **VI. Summary and Conclusions**

At the time of the NAS Report, a HIPM was regarded as desirable but unattainable (Moon, 1993; Citro & Michael 1995). The NAS panel's recommendation to exclude health care entirely was made despite several drawbacks: "an objection to our proposed approach, voiced by Moon (1993), is that it does not explicitly acknowledge a basic necessity, namely, medical care that is just as important as food and housing. Similarly, the approach devalues the benefits of having health insurance, except indirectly" (Citro & Michael, 1995, p. 236). Yet the panel anticipated the day when the US health care system would provide universal health insurance, permitting the construction of a HIPM. We believe that day is drawing close. Recent and future changes to the MA-PD plans mean that the elderly nearly have universal availability of non-risk-rated insurance plans that cap most non-premium MOOP, while the ACA will bring such coverage to all non-elderly, other than the undocumented.

The SPM improves poverty measurement in many respects, but takes a step backward in excluding all health insurance benefits and deducting all MOOP expenditures. The MOOP deduction upwardly biases the measure of poverty among the elderly by as much as 50 percent (Exhibit 5). The SPM treatment of health, in raising the elderly poverty rate far above the OPM rate, strains credibility since substantial evidence suggests the elderly may be much less poor than the OPM indicates and existing studies find that subtracting MOOP expenditures from resources does not improve the predictive empirical validity of poverty measures. Our preliminary analysis suggests that capping the MOOP deduction would improve the validity of the SPM, since those who are Capped Out—no longer SPM poor—appear to be well insured,

have incomes well above the poverty line, receive comparatively little public assistance and are relatively likely to own their own homes and have assets.

The NAS panel and others have advocated a multi-index approach, with separate “material poverty” and “health poverty” measures. Although multiple measures may provide a more accurate picture of each of several dimensions of need, the calculation of multiple measures does not reduce the importance of creating the best possible overall measure of poverty. As Douglas Bernheim (1998) has pointed out in discussing various problems of poverty measurement:

I suspect that we have focused on poverty rates primarily to satisfy the demands of politicians and the press, who generally seem to limit their attention to single numbers. To the extent that economists wish to affect the policy process, it may be necessary to cater to the demand for oversimplification; thus one justifies the exercise in this paper by arguing that, if politicians insist on using a single number, we should make sure that it is the best number possible.

The HIPM we have described, while not perfect, is a practical first step to incorporating health needs and resources into poverty measurement. It has several advantages.

First, unlike the SPM, a HIPM would directly measure unmet health insurance needs, and, therefore, the poverty that results from the unavailability of a basic health plan to some families. Take, for example, a low-income couple that has no access to private insurance and that resides in a state that elects not to extend Medicaid eligibility to families with no children. For this family, the health insurance need amount added to the poverty threshold could be estimated from the ACA exchange even if the family is not eligible for a subsidy in the exchange. Non-premium MOOP expenses would then be deducted from income up to the cap of the basic capped plan. This procedure would improve poverty measurement relative to the SPM by showing how poverty decreases (i.e., the poverty gap is reduced) when basic health needs are met by Medicaid or the ACA insurance exchanges.

Second, a HIPM can show the great benefits received by those who have government-provided health insurance, notably the elderly today (Burtless and Siegel, 2001). Insurance is valuable both in providing tremendously valuable health care (e.g., Cutler 2004) and in protecting assets.



Related to both these advantages, a HIPM would allow us to better assess the economic protection that health policies including the ACA provide to low-income populations. For example, a HIPM can show the effect on poverty rates of state decisions to take up the ACA option to extend Medicaid eligibility to new populations such as low-income childless adults under age 65. Likewise, a HIPM could show the effect of gaining private health insurance coverage through the ACA.

Third, the HIPM improves comparisons of poverty between age groups. Burkhauser, Larrimore and Simon (2010, 2012) make a similar point in showing that including the value of employer-provided insurance in income reduces income inequality. In principle, our HIPM framework could be applied cross-nationally to allow international comparisons of poverty rates that take into consideration the effects of health insurance programs.

Perhaps the chief insight undergirding the HIPM is the conceptualization of health insurance as the core health need. If health needs are conceptualized as health care, it is exceedingly difficult to describe and measure basic health care needs appropriate to individuals. The “tails” of health care expenditures are notoriously long. Moreover, where an individual fits in the tails—the amount of expenditure—is sensitive to a great deal of clinical detail and virtually impossible to define with sufficient precision without health care databases with huge sample sizes. And the distribution and its relationship to individual clinical characteristics changes over time as technology changes. The purpose of health insurance, however, is to deal with those tails. If everyone has insurance, then we know that their health needs can be met, even if they should require large expenditures. We believe that the US is moving toward a social consensus that everyone needs basic insurance that caps MOOP, though they also need sufficient resources to pay for (limited) MOOP expenditures should they get seriously ill.

The new information a HIPM could provide should help inform social policy debates. Tight budgets will make it increasingly important to improve the targeting of public assistance spending. Funds available for redistribution are likely to remain strained due to the effects of the Great Recession, slow economic growth, mounting public debt, the difficult politics of increasing taxes, and the growth of popular social insurance entitlement programs. Yet, labor

market shocks due to technology changes and trade suggest that working-age adults and their children may need increased human capital investments and the protection of social insurance. Thus, it is particularly important that our poverty measures be accurate and valid. A health-inclusive poverty measure will reduce bias in the SPM and, unlike the SPM, demonstrate the marked progress made toward reducing poverty among the elderly through meeting their substantial health needs. For children and non-elderly adults, a HIPM can demonstrate both the contributions of the ACA to reducing poverty and how far we have to go before we can declare victory in the War on Poverty.

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## **Appendix: Detailed Literature Review on Poverty and Hardship Measures of the Elderly**

*Meyer and Sullivan (2010a)*

Meyer and Sullivan use data from the CPS and CEX (Consumer Expenditure Survey) to explore of the sensitivity of poverty levels and trends to analytical choices in poverty measurement such as the price index, equivalence scale, valuation of in-kind benefits, exclusion of tax payments from and inclusion of tax credits in income, use of consumption or expenditures, inclusion of owned housing services flows in consumption, and the inclusion of a “fungible value” of health insurance in income and consumption. As they and others have found (Meyer and Sullivan, various; Cutler and Katz; Slesnick 1993; Charles et al. 2006), consumption-based poverty rates are lower than income-based poverty rates. Furthermore, among the elderly, consumption-poverty rates have fallen much faster than income-poverty rates since 1980. Strikingly, the elderly consumption “deep poverty” rate has fallen markedly but elderly income “deep poverty” rate has increased. The income-poverty gap increased significantly, while the consumption poverty gap declined among the elderly.<sup>41</sup>

Meyer and Sullivan note several advantages of consumption over income in poverty measurement including under-reporting of income (especially distributions from retirement investments such as IRAs) and the importance of savings in financing consumption of the elderly. Indicators of material well-being such as ownership of homes, cars, appliances, central air conditioning as well as indicators of housing quality are substantially higher among the income-poor elderly than the consumption-poor elderly (Table 3). Although reported median financial wealth is low among both groups, at and above the 75<sup>th</sup> percentile, financial wealth is much higher for the income-poor than the consumption-poor.

Meyer and Sullivan show considerable evidence of improvement in the material well-being of both the consumption poor and the income poor over the past 50 years, consistent with the trends in consumption-poverty but in contradiction to increases in deep income-poverty and the income-poverty gap. Finally, consistent with Charles et al. (2006, summarized below), figures on material well-being suggest that the income poor who are not consumption poor are not a particularly needy group.

Meyer and Sullivan also investigate the impact on poverty trends of adding a value of health insurance to income and consumption, though they exclude MOOP from consumption. In discussing their treatment of health insurance and MOOP expenditures they write:

“Differences across individuals in their spending are not a good measure of well-being if they reflect differences in health or differences in coverage. These types of differences are likely to generate cases where more spending means worse well-being. A better approach is to omit out of pocket spending... and account for a value of health insurance provided through an employer or by the government.”

While we agree with much of what Meyer and Sullivan have written, we believe they err in equating higher MOOP expenditures to “worse” insurance coverage and, thus, diminished well-being. In fact, among the elderly in Medicare, the opposite situation may well pertain; an older person with adequate resources may choose a Medicare plan that, in return for higher quality care (better physician choice, wider out-of-network coverage, greater control over service intensity, etc.), requires more MOOP expenditures (at least in expectation).

Meyer and Sullivan show the sensitivity of trends in income poverty and consumption poverty to the inclusion or exclusion of a value for employer-provided or government-provided health insurance. For income-poverty, they add the CPS-imputed value of health insurance to income. However, they note that “Census imputes a fungible value of Medicare and Medicaid only when income exceeds an amount they assume families will spend on food and housing. Thus, these fungible values imply that public health insurance has no value for families whose income is below this level, which surely understates the value of health insurance for this group.” For consumption-poverty Meyer and Sullivan impute separate values for employer-provided and public health insurance. To arrive at a fungible value, which should be lower for people with lower incomes, they cap the insurance value at one-third of total family expenditures (though they plan to refine this procedure; p. 12).

To gauge the effect of adding the value of health insurance to income, Meyer and Sullivan first adjust the OPM using several SPM revisions. This “adjusted” elderly poverty rate declines much more rapidly after 1980 than the OPM (see their Figure 2). However, when they add a fungible value of health insurance to income, the adjusted poverty rate declines much more slowly,

though still a bit faster than the OPM. As they write: “If the CPS’s imputed value of health insurance is also included, the result shows a more modest decline in poverty than is evident for a money income based measure starting in the late 1980s, *due to Medicaid and Medicare becoming less important* for the poor elderly at this time” [emphasis added].

Given the explosion in per capita spending on the elderly through Medicare and Medicaid since 1980, this result is counter-intuitive, to say the least. The dampening of the decline in the adjusted elderly poverty rate when the fungible value of health insurance is added to income likely results from the increase in the measured income deep-poverty and the resulting assignment of a fungible value of zero to health insurance for an increasing fraction of the poor elderly.<sup>42</sup> In contrast, Meyer and Sullivan’s consumption poverty measure declines more rapidly when they add a value of health insurance to consumption, using their method that caps the fungible value at one-third of expenditures (see their Figure 3).

*Charles, Danziger, Pounder and Schoeni (2006, and updated tables)*

Charles et al. challenge the conclusion that consumption-based poverty measures are superior to income-based measures. They use data from the HRS to compare relations between poverty, defined by either low income or low consumption, with the experiences of material hardship of “mature people” (age 53+). They consider the sensitivity of some of their results to excluding MOOP expenditures from consumption (but not from income).

Charles et al. find a higher fraction of older persons are income poor than consumption poor (9.6% versus 4.6%).<sup>43</sup> Only one-quarter of the income poor are also consumption poor, whereas about half of the consumption poor are also income poor (revised Table 1). Thus, 2.3% of the mature population is both income and consumption poor, 7.3% are income-poor, consumption non-poor, and only 2.3% are consumption poor, income-nonpoor. If being poor according to both income and consumption is a better indicator of “true deprivation” than either alone, we should prefer consumption poverty to income poverty for its greater sensitivity to true deprivation.

When they exclude MOOP expenditures from consumption, consumption poverty rises to 5.8%, the fraction of the income poor that is consumption poor rises slightly, to 28%, and the fraction of the consumption poor that is income poor falls slightly, to 48%. The percentiles of the two measures of resources-to-need (income/poverty threshold and consumption/poverty threshold) are moderately correlated (0.54), (p. 8).

Charles et al. compare the bottom quintiles of each distribution and show that socio-demographic characteristics and economic well-being are similar (Table 3 revised). They find small and not statistically significant differences in 12 indicators of physical health; five indicators of mental health; and three indicators of housing and neighborhood quality. Material well-being for the bottom quintile of the “consumption minus MOOP” distribution also differs little from that of the bottom quintile of the income distribution (revised Table 4).

Charles et al. compare how income/needs percentiles and consumption/needs percentiles correlate with well-being using separate multiple regression models (revised Table 5). Nearly always, the estimated effect per-percentile of income/needs is larger (in absolute value) than the effect per-percentile of consumption/needs, which suggests to the authors that income tracks material wellbeing better than consumption. However, these results are reversed when income and consumption are measured in dollars rather than percentiles (revised Table 6), indicating that, when both are measured in dollars, consumption is more highly correlated with well-being than is income.<sup>44</sup>

Charles et al. cross-classify the sample according to the two poverty measures. As they note (page 14) “...the most interesting numbers in Table 7 are for those persons who are poor by one definition, but not poor by the other. Are income-poor/consumption non-poor households worse off than consumption poor/income non-poor households? And what does the difference in their objective indicators of wellbeing suggest about the degree to which low consumption among the elderly reflects an aspect of choice rather than of resource constraint?” In a supplemental table similar to Table 7 but in which the sample is restricted to families with a head aged 65 or older (supplemental Table 8, not revised), they present statistics for two groups: the income-poor/consumption-non-poor and the consumption-poor/income-non-poor.

For simplicity, we call the first group “the dis-savers” and the second “the thrifty.” On average, the dis-savers have MOOP expenditures of \$4,200, which amounts to 14.4% of their total consumption of \$29,166. Assuming an average household size of two persons, the poverty line would be, on average, about \$11,000. Since the dis-savers are all income poor, their average income must be well below \$11,000, so they must be consuming roughly triple their annual income, on average. In contrast, the thrifty group spends only \$800 on MOOP, or 10.9% percent of their total consumption of \$7,339. Although the low-income, higher-consumption group has much higher MOOP expenses, greater MOOP expenses account for only about one-fifth of the difference in overall consumption between the dis-savers and the thrifty. Between 2000 and 2002, mean wealth fell by 61% for the dis-savers, while it rose by 86% for the thrifty group. (The change in median wealth for the two groups was 0% and +26%, respectively.)

Despite much lower levels of consumption, the thrifty group appears to experience higher levels of material well-being than the dis-savers. For example, the thrifty are less likely to be food insecure (3% vs. 9%), in poor/fair health (37% vs. 42%), or to live in homes in fair/poor condition (12% vs. 21%). (Significance levels are not indicated in this table.) Figures such as these lead Charles et al. to conclude that “...the elderly consumption poor who are not income poor do not seem to be particularly needy.” Yet we must also ask whether we should consider particularly needy the dis-saver group (income poor/consumption non-poor) who manage to consume nearly triple the poverty line, on average, despite their low incomes. They argue that: “For mature persons, a complete picture of poverty seems to require knowing about both the degree to which both household income and consumption do not rise to particular levels (p. 4).” If the neediest elderly are both income poor and consumption poor, the good news is that this population comprises about half the consumption poor and only one quarter of the income poor, and, in the HRS, only 2% to 3% of the mature population (aged 53+).

Charles et al. also conclude that “consumption seems to [do] a worse—and certainly does not do a better—job of identifying hardship for mature persons than do income based measures.” However, we believe this conclusion needs to be tempered by the recognition that their

updated analyses show that this result is reversed when resources are measured in dollars rather than in percentiles.

In sum, while combining income and consumption should provide a better measure of need than either measure alone, these figures (and others) also seem to make a strong case for the incorporation of wealth or assets into measures poverty and economic wellbeing of the elderly, given the important role of assets in financing the consumption of the low-income elderly. Most importantly, information on assets can help to identify low consumption levels that result from thrift rather than lack of resources (i.e., need).

### *Levy (2009)*

Levy (2009) uses HRS data to estimate regression models that relate the elderly's experience of material hardship to their income and health. Material hardship is measured by indicators of: A. food cutbacks ("not always had enough money to buy the food you need"; or "skipped meals or eaten less than you felt you should because there was not enough food in the house"); B. Medication cutbacks ("ended up taking less medication than was prescribed for you because of the cost"); or C. Either A or B.

Levy finds that better health and higher income reduce material hardship (Table 5). In discussing alternative interpretations of the health effect on hardship, Levy notes that one "...explanation is that the burden of out-of-pocket spending for medical care reduces resources available for food and medicine; this is the notion underlying criticisms of the fact that the official poverty measure does not take out-of-pocket medical spending into account (p. 12)," However, in supplemental analyses<sup>45</sup>, Levy finds that subtracting MOOP expenditures from income **weakens** the statistical relationship between income and hardship (the coefficient of log income is reduced by one-third to two-thirds). Interestingly, subtracting MOOP from income weakens the effect of poverty on "food cutbacks," but strengthens considerably the effect of poverty on "medication cutbacks." Taken at face value, these results suggest that what matters most for an elderly person's experience of food hardship is how much income she has, not how much income she has net of MOOP expenditures. But income net of MOOP expenditures matters most for medication cutbacks. Together these results suggest that low-

income elderly reduce the impact of MOOP expenditures on non-medical hardship by cutting back on medication.

Levy also finds little evidence that MOOP expenditures mediate or explain the relationship between bad health and material hardship, controlling for income. Specifically, controlling for either income or income net of MOOP expenditures does not weaken the health-hardship relationship. This finding is inconsistent with the idea that, among the low-income elderly, MOOP expenditures typically result from health shocks (or declines in health) that, ultimately, cause material hardship.

Other supplemental analyses (Table 5A) demonstrate that assets matter for the elderly's experience of material hardship. Higher assets are associated with reduced material hardship, whether or not income is controlled. Controlling for assets reduces the effect of income on "food cutback" by half, and the effect of income on "medication cutbacks" by nearly one quarter. Finally, controlling for assets weakens slightly the health-hardship relationship.

In combination with our reading of Meyer and Sullivan and Charles et al., Levy's findings provide evidence that combining income and assets holds higher promise for predicting material hardship than either income alone or consumption alone.

#### *Butrica et al. (2008)*

Butrica et al. (2008) use HRS data to test whether several alternative measures of poverty correspond more closely than the OPM to subjective assessments of wellbeing. We focus on their "Alternative IV" which, among other adjustments, subtracts MOOP expenditures from income. In their HRS sample, the elderly poverty rate is 6.5% according to the OPM but 12.3% according to Alternative IV, similar to the comparison between the OPM and SPM in other contexts (Short 2011; NYC CEO 2012).

Butrica et al. attempt to validate poverty measures against six subjective measures of wellbeing: 1. Difficulty paying bills; 2. Have enough money for food; 3. Skipped meals (among those without enough money for food); 4. Depression; 5. Retirement satisfaction; 6. Self-reported health status.

They write:

Comparing the alternative poverty measures with subjective measures of well-being collected in the HRS can help us evaluate the measures' ability to capture self-reported economic need. The alternatives generally track individuals' assessments of well-being better than the official poverty measure (table 7). For example, 47.8 percent of older adults who are classified as poor when health expenses are accounted for (measures III and IV) report having extreme difficulty paying bills, compared with only 31.5 percent using the official measure.

It is clear that, in the quote above, the authors have misinterpreted a result reported in their Table 7; the 47.8 and 31.5 figures are clearly poverty rates and not proportions of the poor in different categories of well-being. In particular, 31.5 is not the percentage of the poor that has extreme difficulty paying bills, but rather the fraction of those who have extreme difficulty paying bills that is classified as poor under this measure. Since the poverty rate for Alternative Measure IV is higher overall than the OPM rate (12.3 vs. 6.5), it is not surprising that the Alternative Measure IV rate is higher than the OPM within each category of well-being. A poverty measure should be considered "better" than another if it discriminates better between the needy and non-needy. It is difficult to make such an assessment from the information provided in the table.

Butrica et al. offer what we believe to be a correct interpretation of other figures in the table. They note that "...20.9 percent of those saying they do not have enough to pay for food are poor using the official measure, compared with one quarter or more using measures III through IV." This would appear to show that Alternative Measure IV better identifies the needy as needy. However, their figures also demonstrate that the OPM is better than Alternative Measure IV at identifying the non-needy as non-needy: only 5.8% of those who have enough money for food are classified as poor by the OPM compared to 11.3% for Alternative Measure IV. Again, it is difficult to assess whether one poverty measure better distinguishes between the needy and non-needy from the information they present.

Finally, Butrica et al. write: "Higher alternative poverty rates among older adults and especially high rates among some subgroups show the importance of protecting low-income older adults when considering reforms that reduce the cost of government programs for retirees. They also



underscore the importance of considering new policies to boost the incomes of the poorest older adults. Reforms to the SSI program that increase asset limits from levels set back in 1972 should also be considered to allow more of the poorest older adults to gain eligibility (p. vi-vii).” Of course, this conclusion is justified only if the alternative measure of poverty is a better indicator of need than the OPM.

*Butrica et al. (2009)*

Butrica et al. (2009) examine the responsiveness of health care spending and total spending to medical conditions for a panel from the HRS in 2001, 2003 and 2005. They use two health care spending variables: total MOOP and MOOP less premium payments (since they do not expect premiums to vary much with health status for older persons). They also examine two total spending outcomes: spending other than MOOP, and spending other than MOOP or housing. When they restrict the sample to low-income (<\$15,000 per capita in \$2007) elderly households, they find that the presence of health conditions increases MOOP expenditures substantially, especially non-premium MOOP expenditures. However, more health conditions do not reduce non-MOOP expenditures; in contradiction to the idea that non-discretionary MOOP expenditures crowd out other spending, the coefficients are positive, though not statistically significant. These results come from regression models that control for income and assets. Although one might attribute this (null) result to measurement problems or the like, the same analyses for low-income 51 to 64 year olds yields the expected result: among this younger group, more medical conditions associate with much higher MOOP expenditures and lower non-medical expenditures.

They conclude:

It is no surprise, then, that low-income people in their fifties and sixties would have to lower their living standards to cover their health expenses when they develop medical problems. Many are uninsured or underinsured, generally causing out-of-pocket health care costs to increase sharply when they develop chronic conditions. They typically lack the financial resources to maintain their consumption levels when medical costs surge, such as by dipping into their savings. Unlike many people ages 65 and older with adult

children who are well-established in their careers, people in their fifties and sixties may lack family members who are able to provide financial help.

More surprising is our finding that health care spending does not crowd out other types of household spending for adults ages 65 and older, even among those with low incomes. Although virtually all Americans ages 65 and older receive Medicare benefits, the coverage gaps are well known. Beneficiaries usually face substantial cost-sharing requirements, including high deductibles and significant copays. Premiums for coverage of outpatient services are expensive. And several services are excluded from the basic Medicare package, most notably prescription drug coverage during the period covered by this study. Although Medicare began covering prescription drugs in 2006, coverage remains incomplete today (Schneeweiss et al. 2009). Many older adults supplement Medicare with private coverage from former employers or insurance companies, but premiums for supplemental coverage are expensive.

## Endnotes

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<sup>1</sup> We use the term “elderly” to refer to those aged 65 and over.

<sup>2</sup> Some states may not expand Medicaid eligibility. We return to this issue in the conclusions.

<sup>3</sup> John Cogan, a member of the Panel on Poverty and Family Assistance responsible for the 1995 NAS report, raised several of these objections in a dissent (Citro and Michael, 1995, Appendix A).

<sup>4</sup> However, it is often noted that relative poverty measures have the uncomfortable feature that they can rise during economic booms (Smeeding 2006) and may fail to register economic downturns (e.g., NYC CEO 2012, Appendix B). See also Ravallion and Chen,(2011).

<sup>5</sup> Burtless and Siegel (2004, footnote 2) note that Corbett (1999) reported that only about one quarter of all participants at a conference on poverty measurement approved of the NAS recommended treatment of medical expenses.

<sup>6</sup> Meier and Wolfe (2011) discuss the development of a measure of financial risk due to health risk that could be of use to those who seek to create a health dimension of poverty as part of a multi-measure program.

<sup>7</sup> Consider two uninsured families, slightly above the poverty line, one of which will become relatively sick and have substantial health care spending, while the other will be healthy with little spending on health care. After ACA implementation, both will have access to health insurance whose premiums and cost sharing are modest, due to government subsidies. The sick family’s MOOP will likely be reduced by the ACA as the modest rise in premiums is offset by the large reduction in non-premium MOOP. The SPM approach would correctly record them as being less poor since gaining insurance reduces their MOOP. However, the healthy family will see an increase in MOOP due to the modest required premiums. Thus, the SPM will record the healthy family as poorer than they would be without the ACA; yet the SPM would not count in any way the valuable insurance that they have received as a result of the ACA.

<sup>8</sup> The OPM thresholds are based on the Emergency Food Plan of the 1950s, intended to capture the amount of income necessary to provide a nutritionally adequate diet on an emergency basis. This is a diet intended to maintain nutritional health. In a background paper for NAS report, Angus Deaton (1985) argued that early research showed the Emergency Food Budget to exceed the income required to avoid malnutrition and nutrition-related disease. He further explained why using the food budget share at the average family income (1/3) does not provide a logically consistent (scientific) basis for defining or updating poverty thresholds as long as the average income exceeds the poverty line. Although it may lack a firm scientific basis, there is no denying the appeal of a definition of poverty linked to inadequate nutrition (i.e., suboptimal health).

<sup>9</sup> Our focus is on population-level poverty measures, rather than on measures used directly to determine eligibility for means-tested benefits.

<sup>10</sup> Non-premium MOOP includes both cost-sharing payments, such as co-payments and deductibles, and payments for uncovered care.

<sup>11</sup> Burtless and Siegel (2004) show that adding predicted “reasonable” MOOP expenditures to the poverty threshold has a similar effect on poverty rates as subtracting actual MOOP expenditures from resources.

<sup>12</sup> Two caveats to interpreting these results as causal stand out. First, all these studies control for insurance status, but as we describe later, insurance choice is likely a major mediating pathway from wealth/income to MOOP. Insurance status should not be controlled if the objective is to determine the total effect of wealth/income on MOOP expenditures. Second, since health and wealth are known to be associated, it is possible that these estimates ascribe to health status what are in fact wealth effects mediated by prior medical care, psychosocial variables or other factors. In principle, both effects could increase the causal effect of wealth on MOOP.

<sup>13</sup> The three-quarter figure is our calculation based on figures that Fisher et al. (2009) report separately for those aged 65-74 and 75+ in their Table 3, page 6. Although both Meyer and Sullivan (2010a) and Fisher et al. use CEX data, Fisher et al. include MOOP expenditures in consumption but Meyer and Sullivan do not.

<sup>14</sup> Evidence of asset holdings for this small group is mixed; for example, Fisher et al. (2009 Table 5) report median net worth of \$3,140 and \$34,311 for this group at age 65-74 and 75+, respectively.

<sup>15</sup> Although they do not study the effects of subtracting MOOP expenditures, Mayer and Jencks (1989, p. 111) conclude “Official poverty statistics appear to exaggerate the extent of material hardship among the elderly and underestimate its extent among children.”

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<sup>16</sup> As originally developed by Mollie Orshanski in the early 1960s (Fisher, 1992), the OPM threshold includes spending on necessities other than food through the use of a multiplier of food needs, thus implicitly including out-of-pocket health expenditures, but excluding health care funded through insurance or charity. Leaving aside whether the MOOP component of the OPM threshold is obsolete, it would be illogical to include the value of government or employer-provided insurance in resources if the thresholds include only MOOP needs.

<sup>17</sup> The care covered is not simply determined by the formal coverage terms but also by the clinical context, the clinical standards applied and the procedures used to implement them.

<sup>18</sup> Since health status evolves over time, *ex ante* cannot be thought of as before a one-year insurance contract. Rather, it should be thought of as behind the “veil of ignorance,” before one knows health status at all.

<sup>19</sup> We have in mind that cost-sharing takes the form of co-pays for doctor’s visits and medications, rather than high deductibles for inpatient (hospital) care, so that even non-premium MOOP under the cap is not too sensitive to health status.

<sup>20</sup> The actuarially fair premium depends, of course, on the population that is pooled. The pooling should be across the population for the country, or at least a broad group, not selected based on health status, such as all non-elderly in a particular state.

<sup>21</sup> We thank Trudi Renwick for pointing this out.

<sup>22</sup> This past year, the average plan full cost for employer-provided insurance was \$15,745 (Kaiser Family Foundation and Health Research and Education Trust, 2012). <http://www.kff.org/insurance/ehbs091112nr.cfm>

<sup>23</sup> However, the Supreme Court decision *National Federation of Independent Business v. Sebelius* (e.g., *Musucemi 2012*) allows states to opt out of the Medicaid expansion without penalty. As of this writing, the vast majority of states are projected to offer Medicaid coverage for all low-income persons.

<sup>24</sup> Unlike most forms of insurance, those eligible for Medicaid may retroactively acquire insurance coverage, and hospitals and clinics will often perform the paperwork to get such individuals enrolled. Therefore, we consider the uncovered but Medicaid eligible to have their health insurance needs met for the purpose of poverty measurement.

<sup>25</sup> Variation of premiums due to tobacco use is also permitted, with a maximum range of 1.5 to 1.

<sup>26</sup> Although the reduced non-premium MOOP maxima schedule for those below 400% of FPL is part of the ACA legislation, there is some possibility that maxima may end up higher since the actuarial value enhancement that would fund the schedule may be inadequate. See Focus on Health Reform 2011b.

<sup>27</sup> In fact, we performed HIPM calculations at many income levels and found that the ACA ensured that no one was made HIPM poor through provision health insurance. See also Gruber and Perry (2011).

<sup>28</sup> Our HIPM approach does not count free clinics as resources, although they do effectively provide a form of insurance. Some areas have a significant system of such clinics available to undocumented individuals.

<sup>29</sup> Such information can be obtained by searching the CMS interactive Plan Finder Web Site <https://www.medicare.gov/find-a-plan/questions/home.aspx> The web site for 2013 showed multiple plans available in NYC with no premium MOOP for either the drug or health components of the plan and a non-premium MOOP maximum of \$3400.

<sup>30</sup> See US Department of Health and Human Services 2012 Tables 1.1 and 3.5. Our figure of \$10,000 is based on our approximation of expenditures on elderly enrollees in Part D since the aged/disabled split is not available.

<sup>31</sup> \$10,000 is approximately the average of FCSU threshold for a single person who owns her home with no mortgage (\$9206) and a single person who rents (\$10,966), see Short 2012. In the IPUMS-CPS March file for 2011, the weighted mean SPM poverty threshold for SPM resource sharing units consisting of one person aged 65 or older is \$10,437 (authors’ calculation).

<sup>32</sup> Employer-provided supplementary insurance has the direct effect of decreasing non-premium MOOP relative to traditional Medicare, but it increasing it relative to MA-PD plans. It may result in greater care or be richer insurance than MA-PD plans, but is difficult to incorporate in our framework. Because there is a gap between the needs (a full MA-PD plan) and the resources (only government contribution to Medicare) that the employer-provided supplemental insurance fills to some degree, this will lead us to overstate elderly poverty to some extent.

<sup>33</sup> An extreme version of this argument would hold that since all elderly persons can qualify for Medicaid eventually if their income and assets are low enough, then no elderly person can become (post-transfer) poor through medical expenditures, other than during the transition onto Medicaid.

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<sup>34</sup> States are allowed to charge some Medicaid beneficiaries premiums. The rules are given at:

<http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Cost-Sharing/Cost-Sharing.html>.

<sup>35</sup> Some may worry about making the MA-PD plans the default when so many do not use them. In fact, MA-PD plans will not be attractive to many: those with either Medicaid or generous employer-provided supplementary insurance may have better insurance (in different ways), and better-off people may prefer to purchase good supplemental policies that allow more choice (Atherly and Thorpe, 2005). MA-PD plans do not need to be chosen by many for construction of a HIPM; they simply need to be available.

<sup>36</sup> We have not distinguished premium and non-premium MOOP in these illustrative calculations. In some cases, combining the two allows a too-generous MOOP deduction for our examples using a higher cap. For example, a healthy person with no non-premium MOOP who chooses a high quality Medigap plan may have their premium MOOP fully deducted.

<sup>37</sup> The MOOP measures used for the SPM include over-the-counter (OTC) medications and supplies. In our numerical examples, we have included OTC with other MOOP. However, see section V for an explanation of how we would treat OTC in HIPM implementation.

<sup>38</sup> We have limited our application to very simple household structures. A practical difficulty of the HIPM is meshing individual or partial household insurance plans with household-level poverty measurement. We believe with careful implementation, these complexities are manageable (see the discussion Meier and Wolfe 2011).

<sup>39</sup> On this point, Meyer and Sullivan (2012, p. 126) call for “more research on the relationship between health spending and health status.”

<sup>40</sup> However, if the concern is not poverty measurement but redistribution, one could argue that this approach fails to value the redistribution from healthy to sick within the insured pool. This criticism is certainly valid. On the other hand, even from a redistribution perspective, if we take a truly *ex ante lifetime* perspective, going behind the “veil of ignorance” to where no one knows anything of their health status in life, then the value of health insurance is the same for everyone.

<sup>41</sup> In Meyer and Sullivan (pages 22-23), the “deep poverty” rate is the proportion of elderly with family income or consumption below half the poverty threshold; the “poverty gap” is the average (per poor family) difference between income or consumption and the poverty threshold.

<sup>42</sup> In a personal communication, Meyer and Sullivan agreed that this is a possible explanation of their evidence.

<sup>43</sup> When possible, we use figures from the revised and updated tables generously provided to us by the authors.

<sup>44</sup> This reversal most likely reflects a more compressed consumption distribution compared to the income distribution so that a one percentile increase in consumption is smaller in dollar terms than a one percentile increase in income. Charles et al. do not repeat this exercise using non-MOOP consumption. For our purposes, it would be useful to estimate models that focus on effects of income and consumption on wellbeing for those below or near the poverty line.

<sup>45</sup> See supplemental Table 5B. We thank Helen Levy for her generosity in responding to our questions and requests for supplemental analyses.