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# Antipoverty Impact Of Medicaid Growing With State Expansions Over Time

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**ABSTRACT** Out-of-pocket spending on health care pushed over 10.5 million Americans into poverty in 2016. Medicaid helps offset this risk by providing medical coverage to millions of poor and near-poor children and adults and thereby constraining out-of-pocket medical spending. This article examines whether recent state-level expansions to the Medicaid program resulted in reductions in poverty and whether future changes to the program are likely to have similar impacts on poverty. Using a difference-in-differences research design, we found that the recent Medicaid expansion caused a significant reduction in the poverty rate. Moreover, by simulating a counterfactual poverty rate for a hypothetical world without Medicaid coverage, we found that the program’s antipoverty impact grew over the past decade independent of expansion, by shielding beneficiaries from growing out-of-pocket spending. Future expansions or retractions of Medicaid are likely to produce associated effects on poverty.

**M**edicaid continues to be one of the largest components of the safety net for low-income households in the United States. Even before its recent expansion under the Affordable Care Act (ACA), Medicaid funded approximately half of all US births.<sup>1</sup> Since the expansion, the program has covered the medical expenses of millions more poor and near-poor adults than it did previously, helping prevent households from becoming poor because of medical spending. Moreover, the US federal government devotes nearly 10 percent of its annual budget to its majority share of the program’s more than \$5.5 billion total cost.<sup>2–4</sup> While Medicaid’s reach has increased over the past decade, its future is uncertain. Some states continue to opt in to the Medicaid expansions authorized under the ACA, but others are experimenting with work requirements, and federal policy makers continue to debate major rollbacks.<sup>5,6</sup> To better prepare for

the effects of potential changes to the scope of the Medicaid program, state and local policy makers need information about trends in the program’s antipoverty impact as a guide for extrapolating to the future.

Medicaid primarily serves to deliver health care, rather than to provide direct material resources. Thus, much of the research on the program centers on its effects on health services and health outcomes, with much less research focusing on its effects on financial outcomes such as poverty. However, many Americans struggle to pay for medical expenses. In 2016 out-of-pocket spending on health care pushed over 10.5 million into poverty.<sup>7</sup> Moreover, a growing body of evidence indicates that Medicaid expansion has an important protective effect on family resources, especially in the context of reducing the incidence of extreme medical spending outcomes—including reductions in the likelihood of incurring medical debt,<sup>8</sup> worrying about medical bills,<sup>9</sup> or resorting to the use of

risky financial instruments such as payday loans.<sup>10</sup>

Because of the vulnerability of the beneficiary population, a handful of studies over the years have examined the effect of Medicaid on poverty. While these studies suggested that Medicaid affects poverty, they did not examine institutional or demographic trends to extrapolate estimates of the magnitude of future changes.

One study found that in 2010 Medicaid reduced the poverty rate by 0.7 percentage points, relative to a counterfactual world without the program.<sup>11</sup> However, the results might not hold for the expansion population, which differs in important ways from the populations served by Medicaid before the expansion. The study authors found the greatest poverty reduction among these populations—disabled adults, children, and the elderly—whose eligibility was not affected by the ACA expansion. The smallest poverty reduction was found among nondisabled adults, who make up the primary expansion population. Moreover, evidence suggests that the newly eligible are healthier and use less medical care, on average, than their previously eligible counterparts do.<sup>12,13</sup> This suggests that the newly eligible would have a lighter burden of medical spending in the absence of Medicaid coverage, which could preclude any antipoverty impacts at the population level.

A more recent study from the post-ACA era developed a new poverty measure that depends on the availability of insurance regulations implemented in the ACA and thus does not lend itself to historical trend analyses or comparisons with the pre-ACA era. In that study Dahlia Remler and colleagues used publicly available data on the price of a standard insurance policy that provides a comprehensive set of basic benefits to assess whether families had adequate resources to meet this “health-inclusive” poverty threshold.<sup>14</sup> (p1828)

However, the prices and availability of coverage varied widely in the pre-ACA era, which makes it difficult to impose a basic, standard plan. Prices varied with each enrollee’s individual characteristics and prior illnesses, based on unique proprietary formulas for rate setting. Moreover, because insurers could deny coverage to applicants with existing illnesses, basic coverage was altogether unavailable for some, and its price cannot be validly estimated.<sup>15</sup>

As policy makers and voters in several states consider the value of funding Medicaid expansions within the context of fixed state budgets, we examine the poverty implications of states’ expansion decisions. Did the ACA’s Medicaid expansion reduce the nation’s burden of poverty, relative to the pre-ACA era? Would future ex-

pansions or retractions be likely to have effects of similar or even greater magnitude on poverty? This article addresses both of these questions. First, we harness data on differences in states’ timing of ACA expansion implementation to understand the magnitude of the expansion’s anti-poverty effect. Second, we examine trends in the program’s antipoverty effects over time to extrapolate the effects of future changes, to determine whether future expansions or retractions are likely to have similar, smaller, or larger effects than those most recently observed.

## Study Data And Methods

**DATA** We addressed our research questions with data for 2010–16 from the Current Population Survey’s Annual Social and Economic Supplement. The data set is ideal for our study primarily because it is the source of data for our outcome of interest, the Supplemental Poverty Measure (SPM). The Census Bureau developed the SPM as a measure of poverty that would improve upon the official poverty measure in four key ways. First, SPM poverty thresholds are based on contemporary spending on a core set of goods, food, clothing, shelter, and utilities (plus a multiplier), rather than on the cost of food in the 1950s and 1960s, as in the official measure.<sup>7</sup> Second, the SPM poverty thresholds (or needs) take into account geographic differences in the level of needs based on metropolitan-level differences in housing costs. Third, the SPM treats cohabiting couples as equivalent to married couples when considering who shares resources within a household. Finally, the SPM considers a broader definition of resources that adds the value of tax credits and in-kind benefits to cash income and deducts out-of-pocket expenditures on medical care, work expenses, and child care expenses. Importantly for this study, by subtracting actual medical out-of-pocket expenses from resources when calculating the poverty rate, the SPM provides a framework for assessing the contribution of policies such as Medicaid to reducing the poverty rate via reductions in out-of-pocket medical spending.

Additionally, we made use of the large sample size in the Current Population Survey to conduct the state-level analyses necessary to isolate the poverty effects of the ACA’s Medicaid expansion and to assess how expansions in coverage affect individuals’ medical spending. Our study sample reflected the full noninstitutionalized US population, with more than 1.3 million respondent observations over the study period.<sup>16</sup> We analyzed individual- and household-level demographic characteristics including income, race, sex, age, and self-reported health and disability

status, and we adjusted amounts for inflation to 2015 dollars using the Consumer Price Index for All Urban Consumers.

**EVALUATING THE ANTIPOVERTY EFFECT OF MEDICAID EXPANSION** We first evaluated the antipoverty effect of the ACA Medicaid expansion using a standard difference-in-differences design, comparing poverty in expansion states after they expanded eligibility relative to poverty in a comparison group that consisted of expansion states before they expanded eligibility and nonexpansion states. While several states expanded Medicaid in 2014 (the year of the implementation of the ACA's expansion), five states expanded earlier, and four states expanded later.<sup>17</sup> We used this variation in the timing of expansion to control for potentially confounding economic and demographic trends with state and year fixed effects and state-specific linear time trends.

Our outcome of interest was whether or not people in the sample were in poverty, defined as living in a family (that is, an SPM poverty unit) whose resources did not meet its needs according to the SPM. We implemented a logistic regression model in which the binary dependent variable indicated SPM poverty status. Additionally, the model controlled for individual-level demographic characteristics with a series of binary indicators for race or ethnicity (black, Hispanic, Asian, or other), full-time employment status, citizenship, age, sex, and category of potential Medicaid eligibility (children, disabled nonelderly adults, parents, other nonelderly adults, and the elderly). Online appendix A provides more details on additional specifications.<sup>18</sup> Finally, we engaged in a falsification test of our results by evaluating the effect of expansion on the poverty rate of nonelderly adults separately from the rate among the elderly, who were not affected by the expansion. In the latter group we created a subset of elderly people in households having no members younger than age sixty-five, to preclude the estimation of any poverty effects driven by nonelderly household members who might be eligible for the expansion.

**ANALYZING TIME TRENDS IN MEDICAID'S ANTIPOVERTY EFFECT** To assess how the antipoverty effects of Medicaid coverage have evolved over the past seven years, we first compared the actual poverty rate with the rate we would have observed in a counterfactual world without Medicaid coverage. We simulated the counterfactual medical spending of Medicaid beneficiaries, which replaced their reported medical spending in our calculation of remaining household resources available to meet the SPM's threshold of needs. Our simulation model was based on the technique developed by Benjamin Sommers and

## If out-of-pocket spending continues to grow, so too will the economic consequences of cutting Medicaid.

Donald Oellerich,<sup>11</sup> adapted to apply to the 2010–16 data from the Current Population Survey.

We imputed counterfactual medical out-of-pocket spending for each Medicaid beneficiary from the spending of a similar person who was not a Medicaid beneficiary. We conducted random assignments of the spending within mutually exclusive imputation groups defined by year; category of Medicaid eligibility; and deciles of people's estimated propensity for having Medicaid coverage, which we estimated separately by survey year as a function of demographic characteristics and health status. (See appendix B for information on the comparability of imputation groups and a fuller description of the simulation technique.)<sup>18</sup>

Next, we mechanically replaced reported medical out-of-pocket spending with the imputed value of the spending to assess whether the household would be in poverty in the counterfactual policy environment. As mentioned above, the SPM determines a family's poverty status by first deducting medical expenses from family resources to assess whether the remainder could meet basic living needs of food, clothing, shelter, and utilities.

To make the same calculation for the counterfactual environment, we first added back the reported medical out-of-pocket spending to family resources and then deducted the imputed value of the spending. Then we assessed whether the family's counterfactual remaining resources could meet the family's original SPM threshold for basic living needs. To obtain 95% confidence intervals about these estimates, we conducted 100 bootstrapped repetitions of the full simulation.

Additionally, we tested the sensitivity of our poverty reduction results to characteristics of the potential match recipients by stratifying the matching model on imputed eligibility for Medicaid, fair or poor health status, and above- or below-median rate of community health pro-

viders per capita. Our results were robust to each variation.

Finally, we assessed the degree to which Medicaid coverage reduced the financial burden of health care for beneficiaries. We evaluated the share of the population that incurred burdensome levels of medical spending under the status quo circumstance with Medicaid coverage, relative to the counterfactual world without Medicaid. We defined *burdensome medical spending* with the thresholds established in the literature of 10 percent and 20 percent of household resources.<sup>19</sup>

**LIMITATIONS** Our study had several limitations. First, we examined only direct out-of-pocket spending on medical care and did not estimate potential illnesses or earnings losses that beneficiaries might have incurred without access to health care coverage. Nevertheless, out-of-pocket spending is an important indicator of the financial burden of medical care and should be among the primary considerations for health care provision to low-income households.

Second, our study was confined to Medicaid beneficiaries and did not reflect the full scope of publicly provided health care through Medicare, private insurance subsidies, or other public health interventions. Still, understanding the financial effects of Medicaid is an important contribution to the literature on the impacts of health coverage on Americans' well-being.

Finally, some Medicaid recipients would have remained above or below the poverty threshold despite becoming better off as a result of their coverage. To address this limitation, we supplemented our primary analysis with an evaluation of the likelihood of incurring financially burdensome medical expenses.

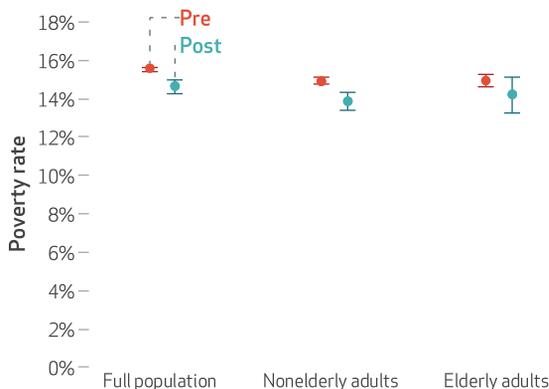
## Study Results

**THE ANTIPOVERTY EFFECT OF MEDICAID EXPANSION** To evaluate the antipoverty effect of the ACA's Medicaid expansion, we used a difference-in-differences design, which relied on variation in the timing of ACA expansion across states. We compared expansion states after they expanded with expansion states before they expanded eligibility and with nonexpansion states. The results show that the expansion of Medicaid reduced the rate of poverty among expansion-state residents by 0.917 percentage points (exhibit 1). In other words, the expansion alone pulled 690,000 Americans out of poverty.<sup>20</sup>

Poverty reduction was concentrated among the subset of nonelderly adults who were targeted by the expansion (exhibit 1). As expected, we found no significant effect among elderly adults, whose eligibility status was not affected

### EXHIBIT 1

**Poverty rates in states that expanded eligibility for Medicaid under the Affordable Care Act and those that did not, 2010-16**

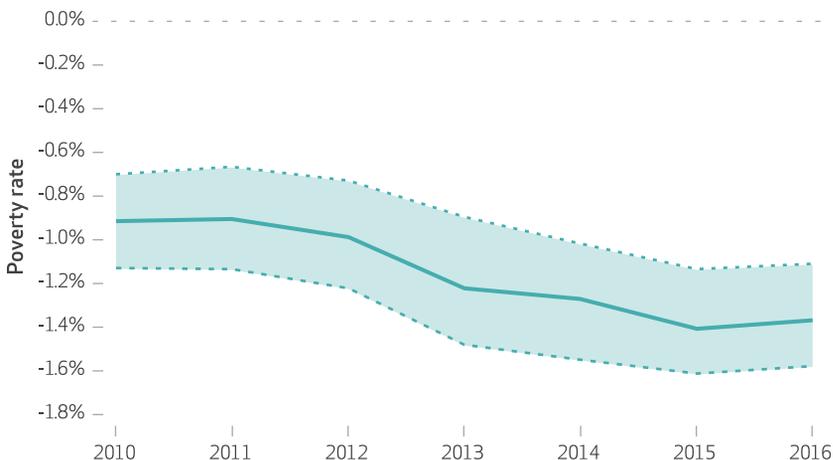


**SOURCE** Authors' analysis of data for 2010-16 from the Current Population Survey. **NOTES** "Poverty rates" use the Supplemental Poverty Measure's poverty thresholds, adjusted for concurrent economic and demographic trends. "Pre" refers to states that had not expanded eligibility as of January 31, 2016. "Post" refers to states that expanded eligibility no later than that date. Estimates are available in appendix exhibits A1-A3 (see note 18 in text). The whiskers indicate 95% confidence intervals. Poverty reduction was significant ( $p < 0.001$ ) for the full population and among nonelderly adults.

by the ACA—which provides empirical support for our analytical approach. We did find a point estimate that suggested some reduction in the rate of poverty among the elderly. Though not significant, the result could indicate an extension of the "welcome mat" phenomenon<sup>21</sup> to

### EXHIBIT 2

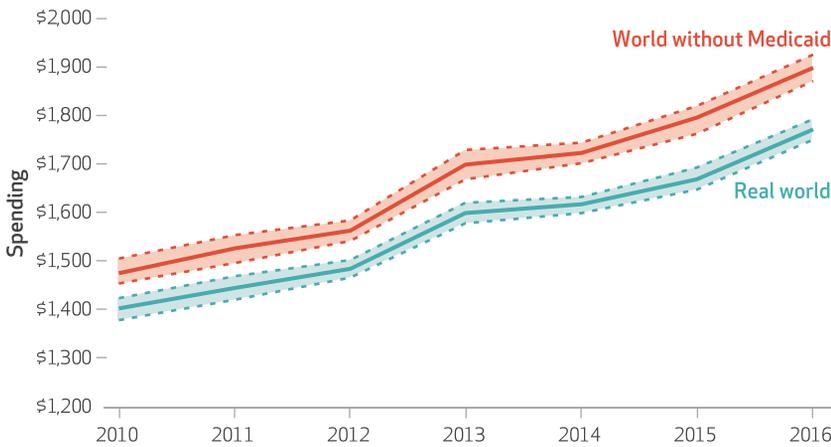
**Impact of Medicaid on poverty rates, 2010-16**



**SOURCE** Authors' analysis of data for 2010-16 from the Current Population Survey. **NOTES** The figure shows the difference in poverty rates (explained in the notes to exhibit 1) between the real world and a simulated counterfactual world without Medicaid coverage. For example, in 2010 Medicaid reduced the poverty rate by 0.9 percentage points. The dotted lines indicate 95% confidence intervals.

EXHIBIT 3

Impact of Medicaid on per capita medical out-of-pocket spending, 2010–16



**SOURCE** Authors' analysis of data for 2010–16 from the Current Population Survey. **NOTES** The figure shows the difference in medical out-of-pocket spending between the real world and a simulated counterfactual world without Medicaid coverage. The dotted lines indicate 95% confidence intervals.

the population ages sixty-five and older. Researchers have observed that the expansion of Medicaid eligibility under the ACA increased rates of participation even among people who were previously eligible, in part because of the additional funding provided under the ACA to streamline enrollment applications and administrative requirements. While prior research has documented the existence of the welcome mat phenomenon among previously eligible nonelderly adults, our results suggest that it might also affect previously eligible people ages sixty-five and older.

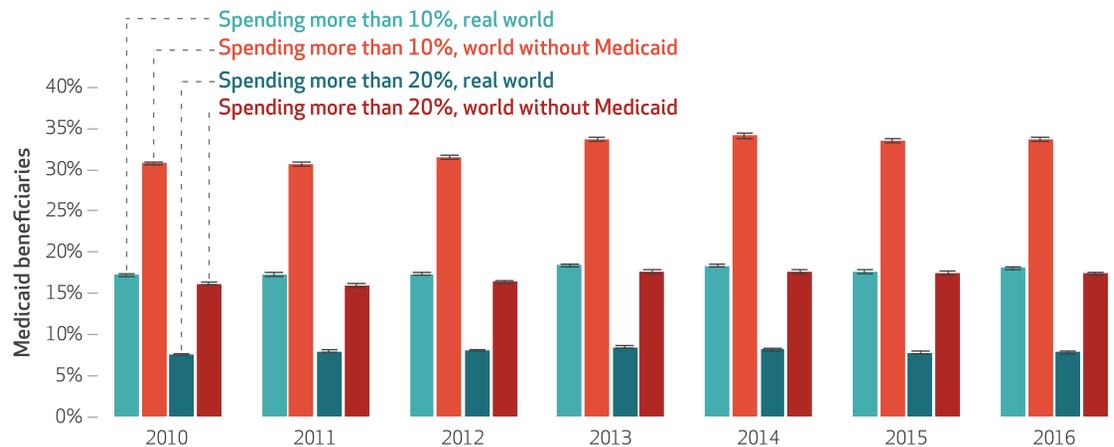
**TIME TRENDS** If the antipoverty effect of Medicaid is growing over time, that would imply that future expansions or retractions of Medicaid could produce poverty effects that are larger in magnitude than those observed under the ACA. We found consistent evidence that this is likely to be the case. In 2010 Medicaid reduced the poverty rate by 0.9 percentage points, relative to the counterfactual poverty rate in the absence of any Medicaid program (exhibit 2), which is corroborated by results in prior literature.<sup>11</sup> In 2015 and 2016 the antipoverty effect increased by more than 50 percent, to approximately 1.4 percentage points. We found that a portion of this growing impact was due to the ACA's state-level Medicaid expansions, under which more Americans were covered by Medicaid. Additionally, as shown in exhibit 3, Medicaid is increasingly buffering recipients against escalating medical out-of-pocket spending.

In other words, medical spending increased among beneficiaries over the study period. However, in the absence of Medicaid, spending would have grown faster, as shown by the counterfactual trajectory of medical out-of-pocket spending in exhibit 3. The combination of a greater number of recipients and this larger buffering effect on that spending resulted in an increased overall antipoverty impact between 2010 and 2016.

**MEDICAL BURDEN** Within the context of beneficiaries' limited household budgets, Medicaid coverage halved the likelihood of incurring a burdensome medical expense. In the period 2010–16 nearly one in five Medicaid beneficiaries (17.2–18.4 percent) spent more than 10 per-

EXHIBIT 4

Impact of Medicaid on the financial burden of medical care, 2010–16



**SOURCE** Authors' analysis of data for 2010–16 from the Current Population Survey. **NOTES** The figure shows the differences in the shares of Medicaid beneficiaries spending more than 10 percent or 20 percent of household resources on medical care between the real world and a simulated counterfactual world without Medicaid coverage. The whiskers indicate 95% confidence intervals.

cent of household resources on medical care (exhibit 4). Without Medicaid approximately one in three (30.7–34.1 percent) would have exceeded that threshold. Moreover, Medicaid also reduced the share of beneficiaries who would have met a more extreme definition of *health care financial burden*: The share of the population devoting more than 20 percent of household resources to health care fell to under one in ten (7.6–8.5 percent) from approximately one in six (16.0–17.7 percent) without Medicaid.

## Discussion

The expansion of Medicaid under the ACA significantly reduced the burden of poverty in the United States. After controlling for broader economic and demographic trends, we found that the expansion reduced the rate of poverty by just under 1 percentage point and was concentrated among the nonelderly adults whom the policy was intended to affect.

Our empirical estimates fell within the expected range relative to the existing literature on the association between Medicaid coverage and SPM poverty rates. The Census Bureau reports that between 2011 and 2016 out-of-pocket medical expenditures raised the SPM poverty rate by 3.3–3.6 percentage points for the population overall.<sup>7</sup> Our estimates imply that entirely eliminating Medicaid would have increased the contribution of medical out-of-pocket spending to the SPM poverty rate by an additional 0.9–1.4

percentage points over that time period (exhibit 2), which is relatively large but reasonable on its face considering the vulnerability of the Medicaid population to both poverty and medical expenses.<sup>22</sup> Our estimate for 2010 replicates the results of Sommers and Oellerich,<sup>11</sup> and our confidence intervals overlap with those authors' confidence interval for that year. Finally, relative to the effect of Medicaid on the "health-inclusive" poverty measure developed by Remler and colleagues,<sup>14</sup> our estimate of a 1.3-percentage-point reduction in SPM poverty rates attributable to Medicaid in 2014 is comparable to the authors' estimate of a 4.6-percentage-point reduction attributable to Medicaid, Medicare, and ACA premium subsidies combined for that year.

## Conclusion

By evaluating trends in the antipoverty effects of Medicaid coverage, we found that the magnitude of the effect increased alongside the growing importance of the program in the years since expansion. If out-of-pocket spending continues to grow—through increases in prices of medical care or premiums, deductibles, and out-of-pocket maximums in private insurance—so too will the economic consequences of cutting Medicaid. Thus, in the face of rising medical spending, future expansions or retractions of public health care coverage are likely to produce corresponding effects on poverty. ■

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A previous version of this article was presented at the AcademyHealth Annual Research Meeting, Seattle, Washington, June 24, 2018.

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## NOTES

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  - 15 According to Remler and colleagues (note 14), “Two conditions make it valid to include health needs and benefits in poverty measurement.... First, health insurance is considered a basic need, like food and shelter.... Second, guaranteed issue and community rating regulations are in effect (as they are under the Affordable Care Act [ACA]), which means that anyone can purchase insurance, and its price does not depend on health status. This makes it possible to determine the price of health insurance for each household, regardless of the household’s specific health care needs.” The second condition does not apply in the pre-ACA era.
  - 16 There were 1,378,863 respondent observations after deletions for missing data.
  - 17 Throughout the study, expansion states are those that implemented the expansion no later January 31, 2016.
  - 18 To access the appendix, click on the Details tab of the article online.
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