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Early Coverage, Access, Utilization, and Health Effects of the Affordable Care Act Medicaid Expansions: A Quasi-Experimental Study

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Abstract

Background—In 2014, only 26 states and D.C. chose to implement the Affordable Care Act (ACA) Medicaid expansions for low-income adults.

Objective—To estimate whether the state Medicaid expansions were associated with changes in insurance coverage, access to and utilization of health care, and self-reported health.

Design—Comparison of outcomes before and after the expansions in states that did and did not expand Medicaid.

Setting—U.S.

Participants—Citizens aged 19–64 with family incomes below 138% of the Federal Poverty Level in the 2010–2014 National Health Interview Surveys.

Measurements—Health insurance coverage (private, Medicaid, uninsured); health insurance better than last year; visits with doctors in general practice and with specialists; hospitalizations and ED visits; skipped or delayed medical care; usual source of care; diagnoses of diabetes, high cholesterol, and hypertension; self-reported health; and depression.

Results—In the second half of 2014, low-income adults in expansion states experienced increased health insurance (7.4 percentage points; 95% CI, −11.3 to −3.4) and Medicaid (10.5 percentage points; 95% CI, 6.5 to 14.5) coverage, and increased quality of insurance coverage compared to a year ago (7.1 percentage points; 95% CI, 2.7 to 11.5) when compared to adults in

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states that did not expand Medicaid. Medicaid expansions were associated with increased visits with doctors in general practice (6.6 percentage points; 95% CI, 1.3 to 12.0), overnight hospital stays (2.4 percentage points; 95% CI, 0.7 to 4.2), and rates of diagnosis of diabetes (5.2 percentage points; 95% CI, 2.4 to 8.1) and high cholesterol (5.7 percentage points; 95% CI, 2.0 to 9.4); changes in other outcomes were not statistically significant.

Limitations—Observational study may be susceptible to unmeasured confounders; relies on self-reported data; limited post-ACA timeframe provides information on short-term changes only.

Conclusions—The ACA Medicaid expansions were associated with higher rates of insurance coverage, improved quality of coverage, increased utilization of some types of health care, and higher rates of diagnosis of chronic health conditions for low-income adults.

INTRODUCTION

A key component of the Affordable Care Act (ACA) was to expand Medicaid eligibility to adults earning up to 138% of the Federal Poverty Level (FPL). Although this provision was originally intended to be enacted in all states, a U.S. Supreme Court decision gave states the option of not adopting this expansion. Twenty-four states decided to forego the expansion in 2014, affecting 6.7 million uninsured low-income adults who would have otherwise gained eligibility (1). Although a few states have since chosen to expand Medicaid, twenty states have still not adopted the expansion at this time (2).

Little is known regarding the impact of the ACA Medicaid expansions on access to care, utilization, and health. This represents a critical gap in knowledge as policymakers continue to debate whether to implement this policy. Early studies indicate an increase in insurance coverage among low-income adults in states that expanded Medicaid when compared to states that did not (3–6). Other investigators have analyzed previous state Medicaid expansions for low-income adults and found that these expansions were associated with lower mortality, greater coverage and access, higher utilization rates, and better self-reported health (7–10). A recent study found that low-income adults in states that expanded Medicaid under the ACA were less likely to report having no personal physician or having no easy access to medicine compared to those in non-expansion states (6). However, this study did not include information on several important outcomes such as the use of health services and the diagnosis of chronic conditions. To date, there has been no direct analysis of the effect of the ACA Medicaid expansions on health care utilization, and only limited analysis of the effect on access and health among those gaining coverage.

METHODS

STUDY DESIGN

We used a quasi-experimental difference-in-differences design that compared changes in outcomes for individuals residing in expansion and non-expansion states before and after the 2014 ACA Medicaid expansions. Our study period included the four years before the expansions (2010–2013) and the first year after (2014). The difference-in-differences methodology adjusted for time-invariant differences in characteristics across the expansion and non-expansion states, as well as secular changes in outcomes over time. We defined

expansion states as states implementing the ACA expansion by the end of 2014 with all other states serving as controls. With the exception of two states (Michigan and New Hampshire), the Medicaid expansions were effective on January 1, 2014. We excluded 5 states that already provided Medicaid or similar coverage to low-income adults during 2010 to 2013 (see Appendix Section 1).

DATA

This study used the 2010–2014 years of the National Health Interview Survey (NHIS), a nationally representative annual survey conducted by the National Center for Health Statistics (NCHS). In this cross-sectional survey, respondents are interviewed throughout the survey year. One advantage of this survey is its high response rate of over 70% (11). The study sample included non-elderly U.S. citizens (ages 19–64) in families with incomes under 138% of the FPL with information on race, ethnicity, age, sex, marital status, and educational attainment. Approximately 1% of respondents were excluded from the sample due to missing information regarding marital status or educational attainment; 9.5% were missing information on family income and received imputed values from multiple imputation files provided by NCHS (12). We excluded noncitizens from the analysis since only some individuals in this group are eligible for Medicaid (13). Our study used restricted-access state identifiers in the NHIS and was performed in a Census Research Data Center. The study was deemed exempt from review by the investigators' designated Institutional Research Boards.

We defined the post-expansion period to include respondent interviews in the second half of 2014, rather than all of 2014, because several of the outcome measures asked about respondent experiences during the last 12 months. Figure 1 illustrates the timing of this 12-month look back period for respondents interviewed in the second half of 2014, shaded in light grey, relative to the timing of the state ACA Medicaid expansions. For almost all respondents, the majority of the 12-month look back period occurs during the period of expanded Medicaid eligibility. On average, respondents in expansion states in the second half of 2014 had received 8.7 months of exposure to the ACA Medicaid expansions at the time of interview.

OUTCOME MEASURES

All outcomes used in the analysis were based on self-reported information in the NHIS. The first set of outcomes was related to insurance coverage and health care utilization. Three binary coverage variables indicated no insurance coverage (defined as coverage through Medicare, Medicaid, private insurance, military, or other government programs excluding the Indian Health Service), Medicaid coverage, and private health insurance coverage at the time of interview. Additionally, we examined whether respondents reported that their health insurance or health care coverage was better than one year ago. This last measure was not available for the 2010 survey year. The utilization measures were whether the respondent: saw or spoke to a doctor in a general practice, family medicine, or internal medicine; saw or spoke to a medical specialist (excluding obstetrician/gynecologist, psychiatrist, and opthamologist); was hospitalized overnight (excluding in the emergency department (ED)); or went to a hospital ED during the past 12 months.

We next considered outcomes related to access, diagnoses of health conditions, and self-reported health. To measure access, we used two binary variables that indicated whether the respondent failed to obtain needed medical care due to cost or delayed care because of worry about cost within the past 12 months. We also considered whether the respondent had a usual place of care for when they were sick or needed advice about their health and whether they reported not having a usual place of care due to the expense or a lack of insurance; the latter measure was not available for the 2010 survey year. Following prior work (10), we investigated whether the respondent reported ever having been diagnosed with diabetes, hypertension, or high cholesterol by a doctor or health professional. The diagnosis for high cholesterol was only available for the 2012 and 2014 survey years. The health outcomes were whether the respondent reported their health to be "very good" or "excellent," if their health was better than one year ago, and if the respondent mentioned depression as a health problem. Some outcomes were available for all members of surveyed households, while others were available only for one sampled member of the household; see Appendix Section 2 and Appendix Table 1.

STATISTICAL METHODOLOGY

Baseline sample characteristics and unadjusted means for each outcome for 2000–2013 (pre-expansion) and the second half of 2014 (post-expansion) were estimated for expansion and non-expansion states accounting for the complex, multi-stage sampling design of the NHIS using survey design variables provided by NCHS (11). In addition, we used an F-test to test for differences in baseline characteristics for the two groups of states and unadjusted difference-in-differences for each outcome measure.

We estimated a multivariate regression model to compare changes in outcomes for expansion and non-expansion states. Our independent variable of interest was the interaction between a variable indicating that the state adopted the ACA Medicaid expansion and a variable indicating that the respondent was interviewed in the second half of 2014. The estimated coefficient on this term provided the average difference in outcomes in expanding and non-expanding states in the second half of 2014 compared to before the implementation of the ACA Medicaid expansions. Observations from the first half of 2014 remained in the sample and were indicated with a separate binary variable that was also interacted with the indicator for the Medicaid expansions. Our estimates were adjusted for race and ethnicity, marital status, number of children and adults in the family, educational attainment, and age, as well as state, half-year, and interview quarter fixed effects. The regression models used NHIS sampling weights and we estimated Huber-White robust standard errors clustered at the state level to account for within-state correlation of the error terms and the state-level nature of the policy change (14). Additional details on the regression model are in Appendix Section 3.

We used linear probability models rather than nonlinear models to conduct this analysis. The primary drawback of using a linear model with binary outcome variables is that it can produce predicted probabilities that lie outside the [0,1] interval (15). However, in our case, the true probabilities were in a range where linear approximation generally performs well (16) and very few predicted values fell outside the [0,1] interval (Appendix Table 2). In

addition, the time required to run nonlinear models was prohibitive and the results estimated from the logit model and linear model were comparable (see Appendix Tables 3–4). We computed robust standard errors to correct for heteroskedastic variance present under the linear model. See Appendix Section 4 for additional discussion.

All analyses were conducted with Stata/IC version 14.0 (StataCorp LP) and used procedures for performing multiple imputation analyses with complex survey data (12, 17). Additional information on the Stata commands used to implement the analysis are in Appendix Section 5.

We conducted several analyses to evaluate the assumptions of our model and assess the sensitivity of our results to alternative model specifications. We tested for pre-existing differential trends across expansion and non-expansion states and assessed the sensitivity of our results to the inclusion of group time trends and the state unemployment rate in this period. We also evaluated the sensitivity of our results to alternative sample definitions that included states that expanded Medicaid prior to the ACA, excluded late expansion implementers in 2014, included non-citizens, included only adults with incomes below 100% FPL, and included only adults over age 25. We examined how the Medicaid expansions affected trends over time in our outcome variables using an interrupted time series design and estimated a triple difference model that used respondents with high incomes as an additional comparison group. Finally, we examined the sensitivity of our results to an alternative method of conducting inference (18). Details of these analyses are in Appendix Section 6.

ROLE OF THE FUNDING SOURCE

This study received no funding.

RESULTS

Table 1 presents baseline descriptive statistics for survey respondents in the expansion and non-expansion states. Low-income adults in expansion states were less likely to be black (18.7% v 28.6%) and more likely to be white (73.5% v 67.7%) or other race (7.7% v 3.7%). Figure 2 plots the unadjusted insurance coverage outcomes for adults in expansion states and non-expansion states from 2010 to 2014. For each state group, the panels show the percent of low-income adults who were uninsured, enrolled in Medicaid, enrolled in private insurance, and reported that their insurance coverage had improved over the last year. All four variables had similar trends in the non-expansion states and expansion states prior to 2014; however, starting in 2014 the series diverged, with larger reductions in the uninsurance rate, larger increases in Medicaid coverage, and improvements in insurance in the states that adopted the expansions. Figure 3 presents trends in doctor visits, specialist visits, hospitalizations, ED visits, access measures, and diabetes diagnoses across the expansion and non-expansion states. See Appendix Section 6 and Appendix Figure 1 for additional outcomes.

The adjusted difference-in-differences estimates for outcomes related to coverage and utilization are presented in Table 2. Estimates for changes during the first half of 2014

relative to the pre-ACA period are in Appendix Tables 3 and 4. Medicaid coverage increased significantly after the ACA Medicaid expansions in the expansion states when compared to the non-expansion states (10.5 percentage points; 95% CI, 6.5 to 14.5), while the percent of respondents reporting no insurance coverage decreased (−7.4 percentage points; 95% CI, −11.3 to −3.4). Respondents in expansion states were also more likely to report their health insurance coverage had improved over the last year (7.1 percentage points; 95% CI, 2.7 to 11.5) compared to the non-expansion states. Visits with a general doctor (6.6 percentage points; 95% CI, 1.3 to 12.0) and hospital stays (2.4 percentage points; 95% CI, 0.7 to 4.2) in the last 12 months also increased significantly in the expansion states compared to the non-expansion states. There were no significant changes associated with the expansions on private health insurance coverage (−3.7 percentage points; 95% CI, −7.6 to 0.2) or other utilization measures.

Table 3 presents outcomes related to access, diagnoses of chronic conditions, and health. There were no significant changes in measures related to access to care, health status, or mental health in the expansion states relative to the non-expansion states. There were significant increases in respondents reporting diagnoses of diabetes (5.2 percentage points; 95% CI, 2.4 to 8.1) and high cholesterol (5.7 percentage points; 95% CI, 2.0 to 9.4) associated with the expansions, but no significant change in hypertension diagnoses.

SENSITIVITY ANALYSES

Alternative models and sample definitions resulted in similar results as those presented in the main analysis (Appendix Tables 3–4). When a percentile-t cluster bootstrap procedure was used to conduct hypothesis testing, all results remained statistically significant (Appendix Table 5). Tests for differences in trends in outcomes for the two state groups prior to the Medicaid expansions did not reveal significant differences for most outcome variables. However, for reports of no usual source of care due to cost, hypertension diagnosis, and health improvements during the last year, the null hypothesis that pre-ACA trends were identical across the expansion and non-expansion states was rejected (Appendix Table 6). When we estimated additional models controlling for different trends in outcomes in expansion and non-expansion states, this did not affect our findings on any outcomes, nor did the triple differences model (Appendix Tables 3–4). Finally, we modeled the effect of the ACA expansions using an interrupted time series approach to examine changes in trends in addition to changes in levels for the outcome variables (Appendix Section 8). We found that the expansions were associated with an increased positive trend in Medicaid coverage but no change in trends for other variables (Appendix Tables 7–8). We were unable to perform these tests for high cholesterol diagnoses because we only observed one data point before and after the expansions.

DISCUSSION

Our study explored the consequences of the ACA Medicaid expansions by comparing changes in health insurance coverage, health care utilization, access to care and self-reported health among low-income non-elderly adults in states that did and did not implement the expansions in 2014. This is the first study to rely on nationally representative federal survey

data to evaluate the impact of the ACA Medicaid expansions. In states that expanded Medicaid, we find that insurance coverage increased by 7.4 percentage points and Medicaid coverage increased by 10.5 percentage points after the ACA expansions when compared to non-expansion states. This finding is consistent with early estimates from the NHIS, but our estimates are larger in magnitude than those using data from Gallup, the American Community Survey, and the Urban Institute (3–6, 19). Our estimates of the increase in Medicaid enrollment are smaller than what are implied by state-level enrollment data on the total number of enrollees provided by CMS (20). Overall, our estimates are within the range of others reported in the literature. We also find new evidence that the Medicaid expansions were associated with a large and significant increase in the probability that an individual reports that their health care coverage had improved compared to the previous year. We did not find evidence of a significant change in private health insurance coverage associated with the expansions under our primary model but did detect a significant decrease in certain specifications reported in the Appendix.

This study provides the first evidence of increased utilization of health services among low-income adults in states that expanded coverage. We observed significant increases in reports that an individual had a hospital stay or visit with a general doctor within the last 12 months in states with expansions compared to non-expansion states. Under the assumption that the observed 6.6 percentage point increase in reported doctor visits and the 2.4 percentage point increase in hospital stays associated with the expansions are entirely attributable to the 10.5 percent of the population who gained Medicaid coverage, our estimates imply that Medicaid enrollment increased the likelihood of a doctor visit by 62.9 percentage points and of a hospital stay by 22.9 percentage points for each newly-enrolled beneficiary over a 12 month period. In comparison, the Oregon Health Insurance Experiment (OHIE) found that Medicaid increased outpatient visits by 21.2 percentage points over a shorter 6-month period and increased hospitalizations by 2.1 percentage points over 12 months (8). We did not find evidence of a significant change in self-reported ED visits associated with the expansions in our main analysis. This is in contrast with the findings of the OHIE, which found that Medicaid increased ED visits using administrative data (9), although consistent with early results from the OHIE that relied on self-reported ED use (8). We did estimate a significant increase in ED visits when we restricted the sample to adults ages 26 and over who did not benefit from changes in rules regarding dependent coverage during this period.

We also provide new evidence of a significant increase in rates of diagnosis of chronic health conditions among low-income adults under the Medicaid expansions. We observed increases in respondent reports of ever being diagnosed with diabetes and high cholesterol associated with the expansions, although we found no significant change in the diagnosis of hypertension. In comparison, the OHIE found no change in rates of diagnosis of hypertension and high cholesterol but a substantial increase in diabetes diagnoses (10). In addition, an early study of diabetes diagnoses following the ACA Medicaid expansions based on laboratory data found evidence of an increase in the number of Medicaid enrollees with newly identified diabetes in states expanding Medicaid compared with non-expansion states (21). The increased detection of chronic health conditions under the Medicaid expansions, if it leads to improved management and control of these conditions, could have important implications for both population health and national health care spending (22).

We did not observe in our study consistent evidence of improvements in access to health care or health status in expansion states. We did not find significant changes in measures of access in our main analysis, but did find significant effects under certain specifications reported in the Appendix. Two questions related to access to care asked respondents about their experience during the previous 12 months, which included some months prior to the Medicaid expansion for most respondents; this may have attenuated our results, especially if respondents did not sign up for Medicaid as soon as they became eligible.

In addition, we found no evidence of improvements in self-reported health among low-income adults in expansion states. While in contrast to studies of pre-ACA state Medicaid expansions for adults, this is consistent with a recent evaluation of the ACA Medicaid expansions using Gallup data (6–7, 10). One potential explanation is that, as a result of the expansions, increased contact with health care professionals and respondents' improved knowledge about their health conditions may negatively impact their perceived health in the short term (23–24). Finally, although the OHIE found improved mental health and decreased positive screenings for depression, we did not find evidence of a change in the mention of depression as a health problem associated with the Medicaid expansions.

Our study has several limitations. First, because the policy decision to expand Medicaid is not assigned randomly, we cannot definitively exclude the possibility that a contemporaneous but unrelated change in either group of states is confounding the results. Second, our study does not account for differences in the design and implementation of the Medicaid expansions across states as allowed under the federal Section 1115 waiver process. In our analysis, we estimate the average change in outcomes among all low-income adults residing in states adopting Medicaid expansions but expect that the effects of the expansions will vary across states depending on the nature of the Medicaid expansions, health care systems, and population in the state. Third, survey data outcomes are based on an individual's recall of their use of health services and may be less accurate compared to administrative data. Fourth, these data only contain information on the first year following the Medicaid expansions; if changes in health and utilization take longer than one year to materialize, it may be too soon to observe the full effect of the policy. Fifth, examining multiple outcomes increases the probability that some significant estimates will be found due to chance. Finally, self-reported health is subjective and may not correspond to changes in clinical measures of health.

Despite these limitations, our study provides new evidence that the ACA Medicaid expansions increased the insurance coverage and health care utilization of low-income adults, in addition to increasing rates of diagnosis of diabetes and high cholesterol. By taking advantage of a rich federal survey, we were able to examine an array of outcomes that have yet to be evaluated in the context of the ACA. Fully understanding the experiences of low-income residents in the states that have already expanded coverage is a crucial input into the ongoing debate surrounding these expansions.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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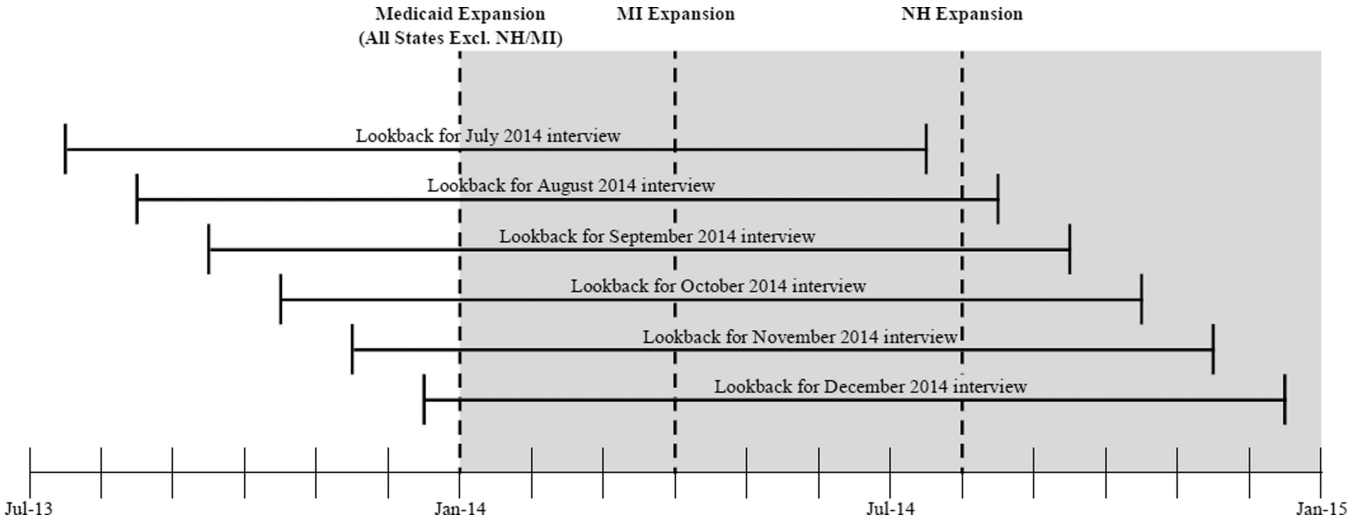

FIGURE 1. Twelve Month Lookback for Participant Response Relative to Timing of 2014 ACA State Medicaid Expansions by National Health Interview Survey Interview Month

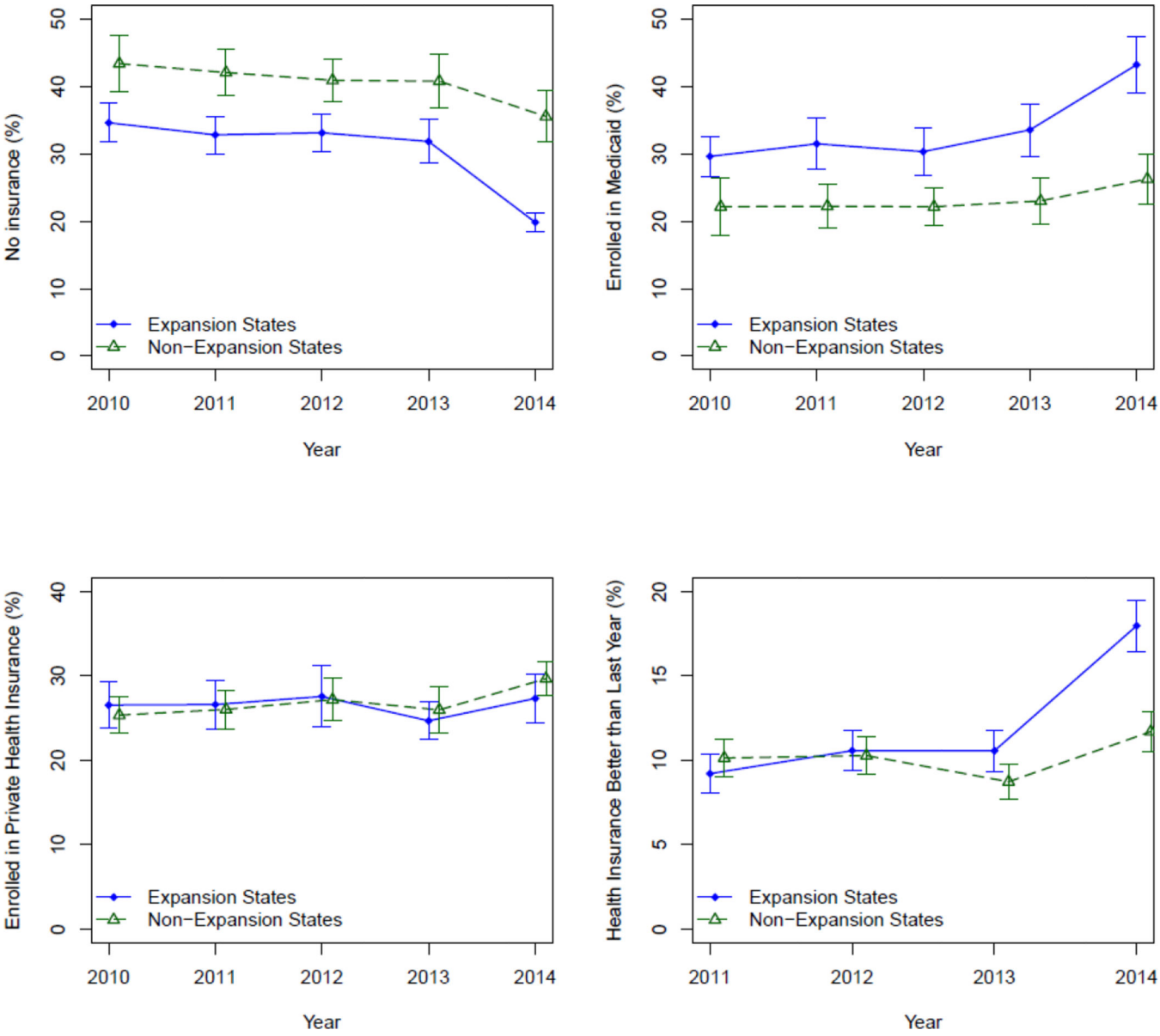

FIGURE 2. Unadjusted Trends in Coverage Outcomes byState ACA Medicaid Expansion Status, 2010–2014

Note: Figure is based on the authors' calculations from the 2010 to 2014 National Health Interview Survey. It presents unadjusted weighted means in expansion and non-expansion states by survey year. The error bars represent 95% confidence intervals. Non-expansion state data are shifted slightly to the right to prevent overlap of confidence bounds. Please note the differences in scales in the y-axis across outcomes.

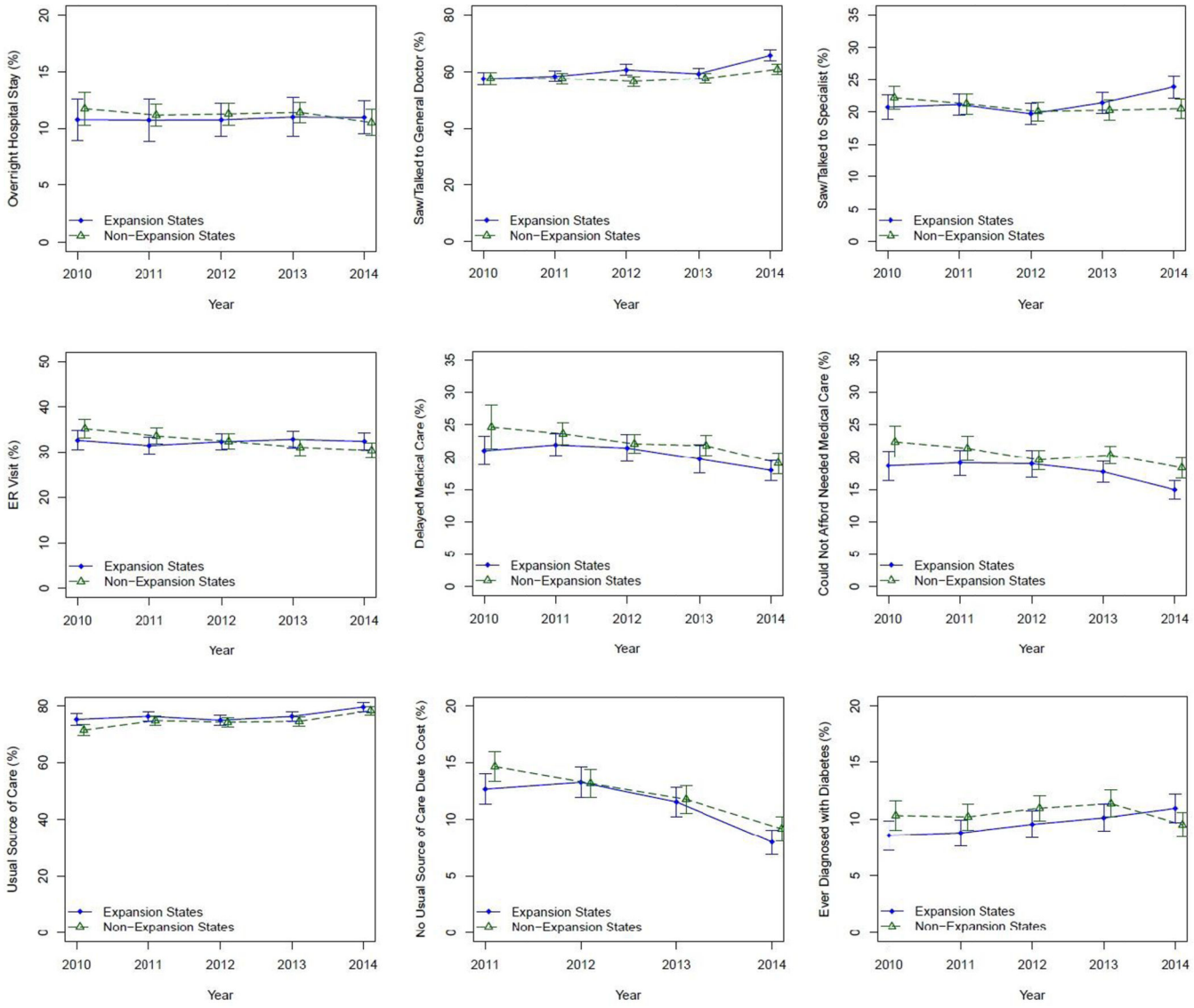

FIGURE 3. Unadjusted Trends in Selected Utilization, Access, and Health Outcomes by State ACA Medicaid Expansion Status, 2010–2014

Note: Figure is based on the authors' calculations from the 2010 to 2014 National Health Interview Survey. It presents unadjusted weighted means in expansion and non-expansion states by survey year. The error bars represent 95% confidence intervals. Non-expansion state data are shifted slightly to the right to prevent overlap of confidence bounds. Please note the differences in scales in the y-axis across outcomes.

Table 1

Baseline Characteristics of Sample by State ACA Medicaid Expansion Status.

Characteristic	Medicaid Expansion States (N=19,140)	Non-Expansion States (N=21, 287)	*P* Value
Male sex (%)	45.5	43.6	0.010
Race group (%)			0.046
White	73.5	67.7	
Black	18.7	28.6	
Other	7.7	3.7	
Hispanic (%)	18.4	12.9	0.50
Age, mean (SD)	37.4 (13.7)	37.7 (13.8)	0.42
Family composition			
Married (%)	28.5	29.5	0.51
Number of children, mean (SD)	1.1 (1.4)	1.1 (1.4)	0.95
Number of adults, mean (SD)	2.1 (1.1)	2.0 (1.1)	0.57
Education (%)			0.139
Less than high school degree	21.5	22.6	
High school degree or equivalent	32.7	36.8	
Some college education	35.4	32.4	
College degree or greater	9.9	7.9	

Note: N=number of observations. Weighted baseline characteristics were estimated using the pooled 2010 to 2013 years of the National Health Interview Survey. The estimation sample was defined as U.S. citizens of the ages 19–64 with family incomes at or below 138% of the federal poverty line. The latter characteristic was imputed for respondents with missing values for family income using multiple imputation files provided by the National Center for Health Statistics. Please see text and Supplementary Appendix for additional details on multiple imputation procedures used in the analysis.

Table 2

Changes in Health Insurance Coverage and Health Care Utilization in States With Medicaid Expansions

Outcome	Medicaid Expansion States		Non-Expansion States		Unadjusted Difference-in-Differences		Adjusted Difference-in-Differences	
	Pre	Post	Pre	Post	Estimate (95% CI)	*P* Value	Estimate (95% CI)	*P* Value
Health insurance (%)								
No insurance coverage	33.1	18.2	41.7	33.9	−7.1 (−11.1 to −3.0)	0.001	−7.4 (−11.3 to −3.4)	<0.001
Medicaid coverage	31.2	44.8	22.4	25.5	10.4 (6.3 to 14.5)	<0.001	10.5 (6.5 to 14.5)	<0.001
Private health insurance	26.4	28.0	26.2	32.0	−4.2(−8.7 to 0.2)	0.061	−3.7 (−7.6 to 0.2)	0.066
Health insurance or health care coverage is better than coverage a year ago	10.0	19.8	9.6	12.5	6.9 (2.5 to 11.2)	0.003	7.1 (2.7 to 11.5)	<0.001
Health care utilization (%)								
Seen or talked to general doctor in last 12 months	58.0	67.9	56.2	58.2	7.9 (2.3 to 13.5)	0.007	6.6 (1.3 to 12.0)	0.016
Seen or talked to medical specialist in last 12 months	20.0	23.8	20.0	21.0	2.8 (−2.3 to 7.8)	0.28	2.0 (−2.7 to 6.6)	0.40
Overnight hospital stay in last 12 months	10.8	11.3	11.4	9.2	2.7 (0.9 to 4.4)	0.004	2.4 (0.7 to 4.2)	0.007
ED visit in last 12 months	31.8	32.1	32.2	29.6	2.9 (−2.2 to 8.0)	0.26	2.5 (−2.6 to 7.6)	0.33

Notes: CI=confidence interval. The pre period is defined as 2010–2013 and the post period is defined as the second half of 2014. All pre- and post-means and difference-in-differences estimates use survey weights. Adjusted difference-in-differences estimates are adjusted for race and ethnicity, age, marital status, number of kids in family, number of adults in family, educational attainment, state and half-year fixed effects, and interview quarter fixed effects. All analyses were conducted using multiple imputation methods. Standard errors are heteroskedasticity-robust and clustered by state.

Table 3

Change in Access, Health, and Diagnosed Health Conditions in States With Medicaid Expansions

Outcome	Medicaid Expansion States		Non-Expansion States		Unadjusted Difference-in-Differences		Adjusted Difference-in-Differences	
	Pre	Post	Pre	Post	Estimate (95% CI)	*P* Value	Estimate (95% CI)	*P* Value
Access to health services (%)								
Delayed medical care because of worry about cost, past 12 months	21.0	18.4	23.0	19.8	0.6 (−2.9 to 4.0)	0.75	0.2 (−2.9 to 3.4)	0.87
Needed medical care but did not get because couldn't afford it, past 12 months	18.6	14.7	20.9	19.0	−2.1 (−5.2 to 1.1)	0.19	−2.3 (−5.2 to 0.5)	0.107
Had a usual place to receive health care	74.6	81.6	72.0	76.7	2.4 (−2.5 to 7.3)	0.33	1.7 (−2.8 to 6.2)	0.45
No usual source of care due to cost	13.3	6.6	14.4	12.1	−4.4 (−8.8 to 0.0)	0.051	−4.3 (−8.6 to 0.0)	0.052
Health condition diagnoses (%)								
Ever diagnosed with diabetes	8.3	12.8	9.6	8.1	6.0 (2.5 to 9.5)	0.001	5.2 (2.4 to 8.1)	0.001
Ever diagnosed with hypertension	25.4	29.1	28.5	29.5	2.7 (−2.4 to 7.9)	0.29	1.7 (−2.3 to 5.8)	0.39
Ever diagnosed with high cholesterol	17.9	22.5	20.0	18.2	6.3 (1.5 to 11.2)	0.012	5.7 (2.0 to 9.4)	0.003
Health status and mental health (%)								
Excellent or very good health	47.0	46.0	45.6	47.8	−3.2 (−8.5 to 2.0)	0.22	−1.7 (−6.3 to 2.9)	0.46
Health better compared with 12 months ago	19.8	19.8	17.5	16.0	1.6 (−2.1 to 5.2)	0.39	2.0 (−1.6 to 5.6)	0.27
Depression mentioned as health problem	7.2	5.3	6.8	4.5	0.4 (−2.1 to 2.9)	0.74	0.2 (−2.2 to 2.5)	0.88

Notes: CI=confidence interval. The pre period is defined as 2010–2013 and the post period is defined as the second half of 2014. All pre- and post- means and difference-in-differences estimates use survey weights. Adjusted difference-in-differences estimates are adjusted for race and ethnicity, age, marital status, number of kids in family, number of adults in family, educational attainment, state and half-year fixed effects, and interview quarter fixed effects. All analyses were conducted using multiple imputation methods. Standard errors are heteroskedasticity-robust and clustered by state.s. Standard errors are heteroskedasticity-robust and clustered by state.