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California's Early ACA Expansion Increased Coverage And Reduced Out-Of-Pocket Spending For The State's Low-Income Population

Ezra Golberstein, Ph.D.,
Division of Health Policy and Management, University of Minnesota School of Public Health

Gilbert Gonzales, Ph.D., and
Department of Health Policy, Vanderbilt University School of Medicine

Benjamin D. Sommers, M.D., Ph.D.
Department of Health Policy and Management, Harvard School of Public Health

Abstract

The Affordable Care Act has expanded Medicaid to millions of low-income adults since the law first went into effect. While many states implemented the Medicaid expansion since 2014, five states and the District of Columbia took advantage of provisions in the ACA and Medicaid waivers that allowed them to expand public coverage as early as 2010. We examined the impact of California's Low-Income Health Program that began in 2010, using restricted data from the National Health Interview Survey. Our study demonstrates that the county-by-county roll out of expanded eligibility for public insurance in California increased coverage by 7 percentage points ($p < 0.05$) and reduced the likelihood of any family out-of-pocket medical spending in the past year by 10 percentage points ($p < 0.05$) among low-income adults.

Introduction

Medicaid expansions to low-income adults are a major part of the Affordable Care Act's (ACA) approach to expanding health insurance. The ACA allows states to expand Medicaid coverage to all adults up to 138% of the Federal Poverty Level (FPL), which is a significant increase from pre-ACA Medicaid eligibility thresholds in most states—particularly for childless adults (1). The ACA's main Medicaid expansions went into effect on January 1, 2014, in more than 25 states, but states had the option of expanding their Medicaid programs under the ACA as early as April 1, 2010.

Five states (California, Connecticut, Minnesota, New Jersey, and Washington) and the District of Columbia opted to expand coverage to low-income adults before 2014, using a combination of the ACA's “early expansion” option and Medicaid 1115 waivers (2). In several of these states, the expansion was relatively modest in terms of income eligibility for adults (New Jersey expanded to 23% of the FPL, and Connecticut expanded to 56% of the FPL). In other states, the expansion largely shifted people from existing public insurance programs into Medicaid (i.e., Minnesota and the District of Columbia).

Early Expansion in California

California's expansion, entitled the Low-Income Health Plan (LIHP), extended eligibility to a potentially larger group of low-income adults than the other early-expanding states, by expanding eligibility to people with incomes as high as 200% of the FPL, depending on the county of residence (3). Prior to this insurance expansion, parents of Medicaid-eligible children with income up to 100% of the FPL were already eligible for Medicaid in California.

California's early expansion was implemented at the county level and allowed counties to receive matched federal funds for covering the uninsured under a 1115 demonstration waiver (3). Beginning in November 2010, individual counties were allowed to expand coverage under the ACA and increase their income threshold for eligibility up to a maximum of 200% of the FPL. For example, Santa Clara, Los Angeles and Orange counties expanded in July 2011 up to 75% of FPL, 133% of FPL, and 200% of FPL, respectively. While some of the most populous counties in California were among the first to expand in July 2011, 52 counties eventually adopted the expansion at various points between July 2011 and March 2013 (3). Online Appendix Exhibit A1 illustrates the timing of the counties' expansions and their income thresholds for eligibility (4). The LIHP ended in January 2014, when participants were shifted into the state's regular Medicaid program (Medi-Cal) or entered the private health insurance marketplace (3).

This paper evaluates the effects of the ACA's early public insurance expansion in California on health insurance coverage, access to care, and out-of-pocket spending. Prior to the ACA, states had several options for expanding their Medicaid programs, such as increasing income thresholds for low-income parents or pursuing federal waivers that enabled states to cover childless adults. In the past two decades, many states took advantage of one or more of these options, and extensive research has documented the effects of these expansions on the actual take-up of Medicaid coverage (or Medicaid-like coverage), the corresponding crowd-out of private insurance, access to care, changes in health care utilization, and health outcomes (5-8). In terms of the early Medicaid expansions under the ACA, one previous study used American Community Survey data to examine Connecticut and the District of Columbia, finding increased Medicaid coverage, particularly among adults with health-related limitations (9). In this paper, we focus on California because it was the largest of the early expansion states and its staggered expansion across counties offers a useful quasi-experimental research design for studying the effects of the coverage expansion to low-income adults. This study builds on previous research (10, 11) demonstrating the impact of the ACA's Medicaid expansions on health insurance coverage and extends the analysis to evaluate the effects of the ACA on access to care and out-of-pocket health care spending.

Study Data and Methods

Data

We used survey data from the 2006-2013 National Health Interview Surveys (NHIS), conducted annually by the National Center for Health Statistics. The NHIS is a large cross-sectional survey that is representative of the non-institutionalized U.S. population, and is one

of the main data sources for tracking health and health care issues in the U.S. Our analysis uses the Integrated Health Interview Series, a harmonized version of the NHIS (12). We linked the NHIS data to county-level information indicating the timing of California's LIHP expansion using a restricted-access version of the NHIS with information on quarter of interview, and state and county of residence, via a data-use agreement with the National Center for Health Statistics.

Outcomes

We examined three outcome domains: insurance coverage, access to and use of care, and out-of-pocket medical spending. We first estimated the impact of California's expansion on three insurance-related outcomes, based on coverage at the time of the interview: whether individuals report having Medicaid or other state-sponsored public health insurance coverage (which would include LIHP); whether individuals report having private insurance; and whether individuals report having any health insurance. We look at three outcomes related to utilization and access: whether any doctor's office visit was reported for the past two weeks; whether the respondent needed but did not get care in the past 12 months due to costs; and whether the respondent delayed receiving care in the past 12 months due to costs.

We analyzed two outcomes related to out-of-pocket medical spending: whether in the past 12 months, the respondent and respondent's family spent any money on medical care; and whether they reported spending over $500 on medical care. These outcomes were derived from a single NHIS question that asked respondents how much they and their family spent on medical care in the past 12 months, exclusive of money spent on insurance premiums, over-the-counter drugs, and costs that will be reimbursed. Respondents chose one of the following categories: no spending, $1-$499, $500-$1999, $2000-$2999, $3000-$4999, or $5000 or more. We chose to analyze the thresholds of any spending and more than $500 because relatively few households incur higher levels of out-of-pocket spending, which limits power to detect significant effects, and because among the low-income population that we study even moderate out-of-pocket spending can represent a significant financial burden.

Analysis

To assess the effects of California's insurance expansion, we estimated multivariate regression models that leveraged the staggered timing of the insurance expansion across counties in California. Our quasi-experimental approach measures the effect of the expansion by comparing changes in each outcome after a county expanded LIHP to changes in counties that did not participate in the LIHP expansion – also known as a “difference-in-differences” analysis. We estimated multivariate regression models where there were two key predictor variables. First, an indicator variable, “*Interim-Expansion*,” was coded as 1 for observations from a county during the quarter in which the expansion began. For the outcomes that corresponded to the past 12 months, “*Interim-Expansion*” was coded as 1 if the expansion in a person's county happened within the past 12 months. The second key variable is “*Post-Expansion*,” which was an indicator variable for whether LIHP had been expanded in a county for the entire quarter. The coefficient on this variable represents the effect of the expansion on the outcome variable.

The regression models were adjusted for the following individual and family-level sociodemographic characteristics: age (coded as 19-25, 26-34, 35-44, 45-54, 55-64 years), sex, race/ethnicity (non-Hispanic white, non-Hispanic black, non-Hispanic other race, or Hispanic), U.S. citizenship and country of origin, educational attainment, marital status, whether anyone in the family has a health-related disability, the number of children in the household, whether the family income is below the Federal Poverty Level. All models also included a full set of county and quarter fixed effects, which captured the direct effect of being surveyed after the expansion began in 2011 (in both expansion and non-expansion counties) and the direct effect of being in an expansion county. We report the coefficients on two key variables, "*Interim-Expansion*," and "*Post-Expansion*," which are interpreted as the average change in the outcome after the expansion, after accounting for the pre-existing trends in the outcome and time-invariant differences across counties. Online Appendix Exhibit A2 describes the full regression equation (4).

We restricted the analytic sample to adults aged 19-64 years who lived in California at the time of interview and did not report receiving Supplemental Security Income (SSI) in the past year, which is an independent pathway to Medicaid eligibility (sensitivity analyses including this group produced similar findings). We ran two sets of analyses. The first restricted the sample to people in households under 200% of the Federal Poverty Level, as this was the upper income limit of the population potentially affected by California's LIHP expansion. Our second analysis restricted the sample to adults in households under 138% FPL, or the population currently eligible for Medicaid expansions occurring in 30 states.

Analyses were conducted with Stata 13. All descriptive statistics and regression estimates were weighted by the NHIS sampling weights to reflect the survey's complex sampling design. We estimated linear regression models to facilitate the interpretation of the key coefficients. Robust standard errors clustered on the county were used to adjust for correlated outcomes within counties and serial correlation (13). We relied on the five imputation files created and recommended by NCHS to impute family income when data were missing (14). All results presented account for these imputations using Stata's multiple imputation package.

Limitations

Our study does have some limitations. First, we conducted a quasi-experimental analysis of the coverage expansion decisions in 52 California counties. Our estimates may be biased to the extent that other things were changing in those counties around the time that the LIHP coverage expansion took effect. Moreover, our ability to detect small changes in health care outcomes is constrained by the sample sizes representing California in the NHIS. As with all survey-based studies, a larger sample size would offer more precise estimates. Yet, unlike other surveys used to monitor health insurance coverage, the NHIS has the advantage of including detailed measures of access to care and health services utilization. Finally, our ability to properly identify the population eligible for subsidized coverage is also only as accurate as the self-reported measures of income, which although detailed, may include some error and is also likely to differ somewhat from the precise definition used for program eligibility purposes.

Study Results

Exhibit 1 describes the characteristics of the California sample in terms of the covariates in the regression model and the outcome variables. For most variables, the <200FPL and <138FPL samples are quite similar. 23% of the <200FPL sample and 29% of the <138FPL group had Medicaid or other state-sponsored health insurance at the time of interview, while over half of both samples did not have insurance at the time of interview. For both groups, approximately 10% had a doctor's visit in the past two weeks, 13% did not get needed care in the past 12 months because of cost, and 15% delayed care due to cost in the past 12 months. For the <200FPL group, 77% had any out-of-pocket medical spending and 37% had at least $500 of out-of-pocket spending in the past 12 months. Both of those proportions are slightly lower for the <138FPL sample.

Exhibit 2 describes the results of the regression models for the insurance-related outcomes. We found that after counties implemented the LIHP expansion, the likelihood of having Medicaid or other state-sponsored health insurance (Panel A) rose by 7.5 percentage points (p=0.004), compared to non-expansion counties in the <200FPL group, and by 7.3 percentage points (p=0.024) for the <138FPL population. We also found that in the <138FPL group, this increase in public coverage happened immediately when eligibility was expanded, as indicated by the increase during the implementation period. We did not find evidence of any significant changes in private insurance for either the <200FPL or <138 FPL groups (Panel B). Overall rates of current insurance coverage (Panel C) rose by 5.8 percentage points (p=0.011) for the <200FPL group, and by 7.2% for the <138FPL group (p=0.023).

Exhibit 3 presents the regression results for access and utilization outcomes. Overall, our results on doctor visits and unmet or delayed care due to cost all point towards improved access and utilization after the implementation of the LIHP expansion, but none of our findings were statistically significant for either the <200FPL or <138FPL samples.

However, we did find reductions in out-of-pocket spending associated with the coverage expansion (Exhibit 4). For the <200FPL group, after counties expanded coverage, the likelihood of reporting any out-of-pocket health care spending dropped by 10 percentage points (p=0.037), and this decline began immediately during the implementation period. For the outcome of at least $500 in out-of-pocket spending, we found approximately a 4 percentage point reduction in both the implementation and the post-implementation periods, but this was only marginally significant for the immediate implementation period (p=0.094). The overall pattern of results was similar for the <138FPL group; the most notable difference being a much stronger and more precise effect on having at least $500 in out-of-pocket spending immediately following the implementation of the LIHP expansion in the respondent's county (8.2 percentage point reduction, p=0.015).

We also tested whether our results were robust to excluding non-citizens who have been in the U.S. for fewer than five years, which reduces our original sample size by 6.5%. The results from these models (not shown) were nearly identical to our main results, except that the increases in public coverage and overall insurance coverage were slightly stronger. We

also found that controlling for employment and self-reported health status did not affect our results in any meaningful way.

Discussion

We present new evidence on the impact of the ACA's early public insurance expansion in the nation's most populous state, and our study is the first to date to assess the effects of this expansion on access, utilization, and out-of-pocket spending. Rates of public coverage and overall health insurance coverage rose significantly after counties in California expanded insurance via the Low Income Health Program. Although we were unable to detect any significant changes in access to care or utilization of physician office visits, we did find reductions in the likelihood of reporting any out-of-pocket spending and the likelihood of incurring $500 or more in out-of-pocket medical spending in the past year.

Our results support the notion that the ACA's early Medicaid and Medicaid-like expansions (such as the LIHP) were successful at significantly increasing coverage among low-income non-elderly adults. In 2010, 46 percent of California adults ages 19-64 with incomes below 200% of the FPL were uninsured, based on our analysis. By comparison, the 5.8 percentage point increase in insurance coverage indicates that the early expansion reduced the uninsured rate in this population by over twelve percent.

One question raised by our results was why we did not also find a significant improvement in access to care associated with the early expansion in California, given previous evidence from quasi-experimental and randomized trials that found Medicaid expansions were associated with improved access to care (6, 7, 15). There are several possible explanations. First, in contrast to the Oregon Medicaid study (15), we are studying the county-level effects of county coverage expansions—not the effect of individuals directly taking up Medicaid coverage. This makes it more difficult to detect the effects of the expansion, since only a subset of eligible individuals even take up Medicaid and similar public coverage options (16). Second, in contrast to other work that does find positive effects of state Medicaid expansions on access to care (6) our sample size is much smaller, and our non-significant results may reflect insufficient statistical power. However, a survey of nonelderly adult Californians in 2014 also found no significant differences in the likelihood of postponing or not receiving needed care between the uninsured and the newly-insured (17). Third, other low-income health care programs and well-funded safety net providers existed in California prior to the LIHP, which could mute the effects of the expansion (18, 19). Finally, both our <200%FPL and <138%FPL samples have limitations. The <200%FPL sample estimates are likely conservative since the sample included many people who lived in the counties that expanded eligibility up to thresholds substantially below 200%FPL, but whose income was too high to gain eligibility. The <138%FPL sample mostly avoids that problem, but its smaller sample size reduces power and does not fully capture the effects of the expansion for counties that expanded to between 138%-200%FPL.

An especially notable result is that California's early ACA expansion significantly reduced families' out-of-pocket medical spending. One goal of any kind of insurance is to protect individuals from financial risk. In the case of health insurance, this risk takes the form of

out-of-pocket spending on health care. We found large reductions in the likelihood that families had any out-of-pocket medical spending in the past year, and some evidence that high out-of-pocket spending decreased immediately following California's county-level coverage expansions. For low-income families, this reduced out-of-pocket spending can be a substantial benefit, as the average household income was $25,015 for the <200FPL group and $18,599 for the <138FPL group. This result echoes other research on the ACA's expansion of dependent coverage insurance benefits to young adults that also found significant reductions in high out-of-pocket spending (20, 21), and suggests that the ACA is providing significant benefits in terms of financial risk protection.

Policy Implications

Our results suggest that the insurance expansions under the ACA may have important effects on adults with incomes below 138% of the FPL — the population now eligible for Medicaid in 30 states. We found that uninsurance dropped seven percentage points in California for the <138 FPL population, and the expansions significantly reduced out-of-pocket spending. Low-income adults meeting new income eligibility standards under the ACA may be healthier than many low-income adults previously insured by Medicaid, but even so, our findings indicate that the coverage expansions are likely to provide substantial financial protection for new enrollees. In turn, these reductions in out-of-pocket spending may also correspond to reductions in uncompensated care, thus improving the financial status of safety net providers and hospitals.

While California is a diverse and large state that in many ways reflects the diversity of the U.S. population, it is nonetheless a unique policy environment. If anything, however, it is reasonable to expect that the changes we observed in coverage and financial protection for low-income adults after the LIHP will be even greater in states expanding Medicaid since 2014 that had less-generous public programs than California before the ACA, such as Kentucky, West Virginia and Indiana.

Conclusion

We found that the ACA's early insurance expansion for low-income families in California was associated with significant increases in health insurance coverage and reduced out-of-pocket health care spending. It will be important to continue to assess how the ACA's main Medicaid expansions that began in January 2014 are affecting health insurance rates, access to care, and utilization, and to identify the barriers to care that remain for low-income beneficiaries.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Exhibit 1
Characteristics of California's Low-Income Population

	Population: <200%FPL	Population: <138%FPL
Sample size	23,857	15,841
Age (years)		
18-25	22.8%	23.3%
26-34	23.8%	24.4%
35-44	23.4%	23.7%
45-54	18.2%	17.4%
54-64	11.6%	10.9%
Female	50.9%	51.3%
Race/ethnicity		
White, non-Hispanic	23.4%	21.3%
Black, non-Hispanic	6.2%	6.3%
Other race, non-Hispanic	11.2%	10.8%
Hispanic	59.1%	61.4%
Education		
Less than high school	36.2%	40.0%
High school	24.3%	23.5%
Some college or technical training	26.0%	24.0%
College graduate	10.1%	8.9%
Poverty[a]	40.9%	62.9%
Family income (mean)	$25,015	$18,599
Medicaid	23.0%	28.7%
Any Insurance	54.0%	51.7%
Any doctor visits, past two weeks	9.9%	10.4%
Didn't get needed care because of cost, past 12 months	13.0%	13.6%
Delayed care due to cost, past 12 months	15.3%	15.5%
Any OOP spending, past 12 months	76.7%	72.4%
OOP spending >$500, past 12 months	36.9%	33.2%

Source: National Health Interview Survey, 2006-2013.

Notes:

[a]Poverty is defined as family income below the Federal Poverty Level (<100% FPL).

Exhibit 2
Changes in Health Insurance After California's Early Medicaid Expansion

	Population: <200%FPL, N=23,462		Population: <138%FPL, N=15,571	
	Interim- Expansion Period	**Post- Expansion Period**	**Interim- Expansion Period**	**Post- Expansion Period**
Panel A: Medicaid/ Public Insurance	0.046	0.075***	0.076*	0.073**
Panel B: Private Insurance	0.004	-0.008	-0.012	-0.0002
Panel C: Any Insurance	0.039	0.058**	0.056	0.072**

Source: National Health Interview Survey, 2006-2013.

Notes: This exhibit shows results of linear regression models. All models controlled age, sex, race and ethnicity, citizenship and country of origin, education, marital status, the presence of someone in the family with a health-related disability, the number of children in the household, poverty status, county and quarter of interview.

* p<0.10,

** p<0.05,

*** p<0.01

Exhibit 3
Changes in Access to Care After California's Early Medicaid Expansion

	Population: <200%FPL		Population: <138%FPL	
	Interim- Expansion Period	**Post- Expansion Period**	**Interim- Expansion Period**	**Post- Expansion Period**
Panel A: Any doctor visits, past two weeks	-0.022	0.011	-0.025	0.021
	N=23,844		N=15,835	
Panel B: Didn't get needed care because of cost, past 12 months	-0.018	-0.017	-0.019	-0.028
	N=23,839		N=15,831	
Panel C: Delayed care due to cost, past 12 months	-0.017	-0.046	-0.026	-0.045
	N=23,827		N=15,824	

Source: National Health Interview Survey, 2006-2013.

Notes: This exhibit shows results of linear regression models. All models controlled age, sex, race and ethnicity, citizenship and country of origin, education, marital status, the presence of someone in the family with a health-related disability, the number of children in the household, poverty status, county and quarter of interview.

* p<0.10,

** p<0.05,

*** p<0.01

Exhibit 4

Changes in Out-of-Pocket Medical Spending After California's Early Medicaid Expansion

	Population: <200%FPL, N=23,027		Population: <138%FPL, N=15,303	
	Interim- Expansion Period	**Post- Expansion Period**	**Interim- Expansion Period**	**Post- Expansion Period**
Panel A: Any OOP spending, past 12 months	-0.061*	-0.101**	-0.065	-0.107*
Panel B: OOP spending >$500, past 12 months	-0.043*	-0.043	-0.082***	-0.034

Source: National Health Interview Survey, 2006-2013.

Notes: This exhibit shows results of linear regression models. All models controlled age, sex, race and ethnicity, citizenship and country of origin, education, marital status, the presence of someone in the family with a health-related disability, the number of children in the household, poverty status, county and quarter of interview.

* p<0.10,

** p<0.05,

*** p<0.01