


# How did the Affordable Care Act Medicaid Expansion Affect Coverage and Access to Care for Low-Income Parents Who Were Eligible for Medicaid Before the Law Was Passed?

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## Abstract

We use the National Health Interview Survey from 2010 to 2017 and a difference-in-differences approach to assess the impact of the Affordable Care Act (ACA) Medicaid expansion on coverage and access to care for a subset of low-income parents who were already eligible for Medicaid when the ACA was passed. Any gains in coverage would typically be expected to improve access to and affordability of care, but there were concerns that by increasing the total population with coverage and thereby straining provider capacity, that the ACA would reduce access to care for individuals who were already eligible for Medicaid prior to the passage of the law. We found that the expansion reduced uninsurance among previously eligible parents by 12.6 percentage points, or a 40 percent decline from their 2012–2013 uninsurance rate. Moreover, these effects grew stronger over time with a 55 percent decline in uninsurance 2 to 3 years following expansion. Though we identified very few statistically significant impacts of the expansion on affordability of care, descriptive estimates show substantial declines in unmet needs due to cost and problems paying family medical bills. Descriptively, we find no significant increases in provider access problems for previously eligible parents, and very limited evidence that the Medicaid expansion was associated with more constrained provider capacity. Though sample size constraints were likely a factor in our ability to identify impacts on access and affordability measures, our overall findings suggest that the ACA Medicaid expansion positively affected our sample of low-income parents who met pre-ACA Medicaid eligibility criteria.

## Keywords

Affordable Care Act, Medicaid expansion, low-income parents, coverage, access to care, spillover effects

## What do We Already Know About This Topic?

Existing evidence on the Affordable Care Act Medicaid expansion confirms a positive enrollment effect among some previously eligible populations, but the effects on access to and affordability of care for those populations are less clear.

## How Does Your Research Contribute to the Field?

This study builds on existing literature by focusing on potential coverage gains for previously eligible parents under the ACA Medicaid expansion and further explores potential access implications of the expansion for this population.

## What Are Your Research's Implications Toward Theory, Practice, or Policy?

Concerns that Medicaid expansion would compromise access for previously eligible populations were overstated, and such concerns should not serve as a deterrent to further Medicaid expansions.

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## Introduction

As of June 2021, 37 states (including DC) had implemented the Affordable Care Act (ACA) Medicaid expansion which extends Medicaid eligibility to all nonelderly adults with incomes up to 138 percent of poverty. Much of the empirical research on the ACA has focused on establishing the impact of the Medicaid expansion on low-income adults. Broadly speaking, these studies have shown that nonelderly adults in the income group targeted by the ACA Medicaid expansion have experienced reductions in uninsurance,<sup>1,2</sup> reductions in unmet health needs and health-care related financial burdens,<sup>3,4</sup> increases in receipt of health care services,<sup>5,6</sup> and improved health outcomes.<sup>7</sup>

Fewer studies have examined the extent to which the ACA Medicaid expansion, or the ACA more generally, has had spillover effects on those groups not directly targeted by the law. Positive spillover effects might include increased take-up of Medicaid coverage among those who were already eligible prior to expansion, such as children, parents, or the disabled. Several policy and program changes, including new outreach and enrollment efforts and the imposition of an individual mandate with penalties for noncompliance, may have contributed to such positive woodwork or welcome mat enrollment effects among previously eligible individuals in both expansion and nonexpansion states. Spillover effects for children could also be driven by new eligibility for their parents.

Several studies have considered the effects of the ACA Medicaid expansion on coverage for previously eligible populations. Freaun, Gruber, and Sommers<sup>8</sup> examined the effects of the Medicaid expansion on the nonelderly population and concluded that about 44 percent of the coverage gains through 2014 were among previously eligible individuals. This estimate may be an upper bound because their analysis sample combined adults and children and classified those that gained eligibility under early ACA expansions as “previously eligible” in 2014. Additional studies have explored separate spillover effects for disabled adults, children, and dual-eligible Medicare beneficiaries. Hudson and Moriya found positive enrollment effects among children who were eligible for Medicaid or CHIP resulting from expanded eligibility for their parents under the ACA.<sup>9</sup> McInerney, Mellor, and Sabik found that the ACA Medicaid expansion increased the share of Medicare enrollees with secondary Medicaid coverage,<sup>10</sup> and Stimpson and colleagues found positive Medicaid enrollment effects for disabled adults who were likely eligible prior to ACA expansion.<sup>11</sup> None of these studies examined outcomes other than insurance coverage for previously eligible populations, however.

Gains in coverage among the previously eligible would typically be expected to improve access to and affordability of care, but there were concerns leading up to the ACA

coverage expansions that by increasing the total population with coverage and thereby straining provider capacity, the ACA would reduce access to care for individuals who were already insured prior to the passage of the law.<sup>12,13</sup> This concern was particularly pronounced for those enrolled in Medicaid prior to the coverage expansion. Citing low provider payment rates that have historically kept many providers from accepting Medicaid patients, Antos<sup>14</sup> suggested that “putting millions of additional people into a program that has been struggling with access to care for the past 45 years is likely to result in worsening access for those who are currently enrolled in Medicaid”. In anticipation of such concerns, the ACA included a federally financed increase in Medicaid payment for primary care in 2013 and 2014 and an increase in federal support for federally qualified health centers through 2015.

Carey, Miller, and Wherry found no evidence that the ACA Medicaid expansion compromised access for Medicare enrollees,<sup>15</sup> while evidence from an audit study in 10 states found increased appointment availability for Medicaid patients and stable appointment availability for privately insured patients following the ACA.<sup>16</sup> The audit study also found evidence of increased wait times for both Medicaid and privately insured patients, however. Miller and Wherry also found that the Medicaid expansion through 2015 increased reports of delaying care due to wait time for an appointment,<sup>4</sup> but when data through 2017 were added, these access problems had diminished.<sup>17</sup>

In a study examining the effects of the Medicaid expansion on those with incomes between 100 and 138 percent of poverty, Selden, Lipton, and Decker<sup>18</sup> found evidence that the Medicaid expansion increased problems finding a provider. Importantly, the same study also found that the Medicaid expansion increased health care affordability for individuals in this income range which was consistent with findings from Blavin and colleagues who studied the same population using a different data source and found that Medicaid expansion lowered out-of-pocket spending burdens.<sup>19</sup> Because adults in this income group are eligible for Medicaid coverage in expansion states and Marketplace coverage in nonexpansion states, these studies provide some evidence of the tradeoffs between public and private coverage. Together, existing evidence on the ACA seems to confirm a positive enrollment effect among previously eligible populations, but the effects on access to and affordability of care for those populations are less clear.

In this paper, we use data from the National Health Interview Survey (NHIS) and a difference-in-differences (DD) approach to assess the impact of the ACA Medicaid expansion for a subset of low-income parents who were most likely to be eligible for Medicaid when the ACA was passed. Specifically, we define “previously eligible parents” as US citizen parents with incomes below the 2010 Medicaid eligibility threshold in their state. In 2010, all states offered

Medicaid to some nondisabled, nonpregnant parents, but the median eligibility threshold was 64 percent of poverty and eligibility levels varied substantially from state to state.<sup>20</sup> While participation among these parents was about 66 percent in 2010, approximately 27 percent of eligible parents remained uninsured before the ACA.<sup>21</sup> Thus, previously eligible parents consist of both previously insured and previously uninsured parents.

We consider the effects of the expansion on coverage for previously eligible parents, which we expect to increase consistent with welcome-mat effects observed for other groups. We also examine the net effects on access to providers for previously eligible parents, which may increase along with coverage for the previously uninsured but could also decrease for the previously insured due to provider capacity constraints. We focus on parents because unlike other previously eligible groups including children, disabled adults and pregnant women, previously eligible parents are more likely to share providers with newly eligible parents and childless adults gaining coverage through the expansion and thereby face potential supply constraints under the ACA. This study builds on existing literature by focusing on potential coverage gains for previously eligible parents and further explores potential access implications of the ACA Medicaid expansion for this population.

## Methods

### Data

The NHIS provides nationally representative estimates on a variety of demographic, socioeconomic, and health characteristics for the civilian noninstitutionalized population.<sup>22</sup> We used public use data from the 2010–2017 IPUMS Health Surveys,<sup>23</sup> and obtained access to state and county identifiers through the National Center for Health Statistics (NCHS) Research Data Center.

We defined parents as adults ages 19–64 years who are the biological, adoptive, or step-parent of a child under age 19 in their household. We calculated income relative to the federal poverty level (FPL) for the parent's tax unit which includes their spouse, if applicable, and any children ages 18 and under, but does not include unmarried partners or other relatives. In the case of unmarried parents living together, children were assigned to the tax unit of the mother.

We defined previously eligible parents as US citizen parents with tax unit income in the calendar year prior to the survey below the 2010 working parent Medicaid eligibility threshold in their state and below 138 percent FPL.<sup>20</sup> For example, a parent surveyed in 2015 and living in Pennsylvania would be identified as previously eligible if their 2014 tax unit income fell below the 2010 eligibility threshold in Pennsylvania of 46 percent FPL. We excluded pregnant women and those receiving SSI or Medicare from our sample

because they face different pathways to Medicaid eligibility and may be less likely to share providers with those gaining coverage under the ACA.

We defined expansion states as those that had expanded by July 2016.<sup>1</sup> There was considerable variation in pre-ACA parental eligibility thresholds both within and across expansion and nonexpansion states, however. For example, the 2010 parental eligibility threshold averaged 102 percent FPL in expansion states and 66 percent FPL in nonexpansion states. As a result, the composition of the previously eligible parent population varies dramatically in expansion vs nonexpansion states ([Supplementary Appendix Table A1](#)), with those in expansion states more likely to be older, male, Hispanic, married, more educated, and higher income, and less likely to be non-Hispanic Black or white. While these observable differences can be controlled for in a multivariate model, the large differences in these populations raise concerns about the validity of using nonexpansion states as a valid counterfactual for expansion states in our analysis.

Thus, we focused on a subset of states that had similar pre-ACA parental eligibility thresholds below 70 percent FPL. Because the expansion states in this group experienced large gains in eligibility for both parents and childless adults, we would expect the stress on provider capacity to be largest in these states. Moreover, this sample also reflects a subset of states with a more similar population of previously eligible parents across expansion and nonexpansion states ([Supplementary Appendix Table A2](#)). There are 12 expansion states and 15 nonexpansion states in our sample.<sup>2</sup>

We assigned each previously eligible parent to one of four mutually exclusive coverage categories: Medicaid/CHIP, employer coverage, other coverage or uninsured. Employer coverage includes coverage through the military, and other coverage includes Marketplace, other public, and other private coverage. To assess potential improvements in access and affordability resulting from the welcome-mat effect, we identified two affordability measures and three measures of access that we would expect to improve among previously eligible parents who gained coverage under the expansion. These include reporting an unmet need for medical care due to cost and reporting family problems paying medical bills in the past 12 months, as well as reporting a usual source of care other than the emergency department, a visit to a general doctor in the past 12 months, and a visit to any provider in the past 12 months.<sup>3</sup>

To identify potential access problems associated with limited provider capacity, we examined five non-cost-related reasons for delays in care including wait times on the phone, in the office, or for an available appointment as well as inconvenient office hours or a lack of transportation. A lack of transportation may indicate capacity constraints if closer providers are unavailable, but it may also reflect other access barriers. We also constructed a composite measure for reporting any of these issues. We also examined reports of trouble finding a provider and inability to find a provider in the past 12 months. We would

expect increases in these measures if the influx of newly insured under the Medicaid expansion strained provider capacity, but we might also expect increases in these measures if newly insured parents started seeking care and became aware of these barriers to access for the first time. Coverage and affordability measures are available for all previously eligible parents, while access measures are only available for one “sample adult” per family.<sup>4</sup> The sample sizes for these analyses are approximately 2600 and 2000, respectively.

## Analysis

We pooled data in two-year intervals to increase sample size and summarized changes between 2012–2013, just before the major ACA coverage expansions, and 2016–2017, after all states had expanded by July 2016. All estimates use the appropriate NHIS survey weights for these populations.

To assess the impact of the Medicaid expansion on previously eligible parents, we used a DD analysis to compare changes in outcomes for previously eligible parents in expansion states to those in nonexpansion states. Using nonexpansion states as a counterfactual allows us to isolate the effects of the expansion from other aspects of the ACA that may have affected all previously eligible parents. This includes any welcome-mat effects that were occurring in nonexpansion states. The key assumption for the DD approach to produce causal estimates requires that expansion and nonexpansion states would have followed similar trends in the absence of the expansion, commonly known as the parallel trends assumption.

We implemented the DD in a regression context equation (1) controlling for individual demographic and socioeconomic characteristics ( $X_{ist}$ ) including age, sex, race/ethnicity, marital status, number of children, residence in a rural area, educational attainment, income relative to poverty, and county unemployment rate ( $Z_{ct}$ ). Our first specification uses a binary indicator for expansion status set to one in a state and year following expansion ( $Expand_s \times POST_t$ ). State ( $\theta_s$ ) and year ( $\lambda_t$ ) fixed effects allow this indicator to reflect the average effect of the Medicaid expansion on the outcomes of interest, and standard errors are clustered at the state-level

$$Y_{ist} = \theta_s + \lambda_t + \beta(Expand_s \times POST_t) + \Gamma'X_{ist} + \Omega'Z_{ct} + \eta_{ist} \quad (1)$$

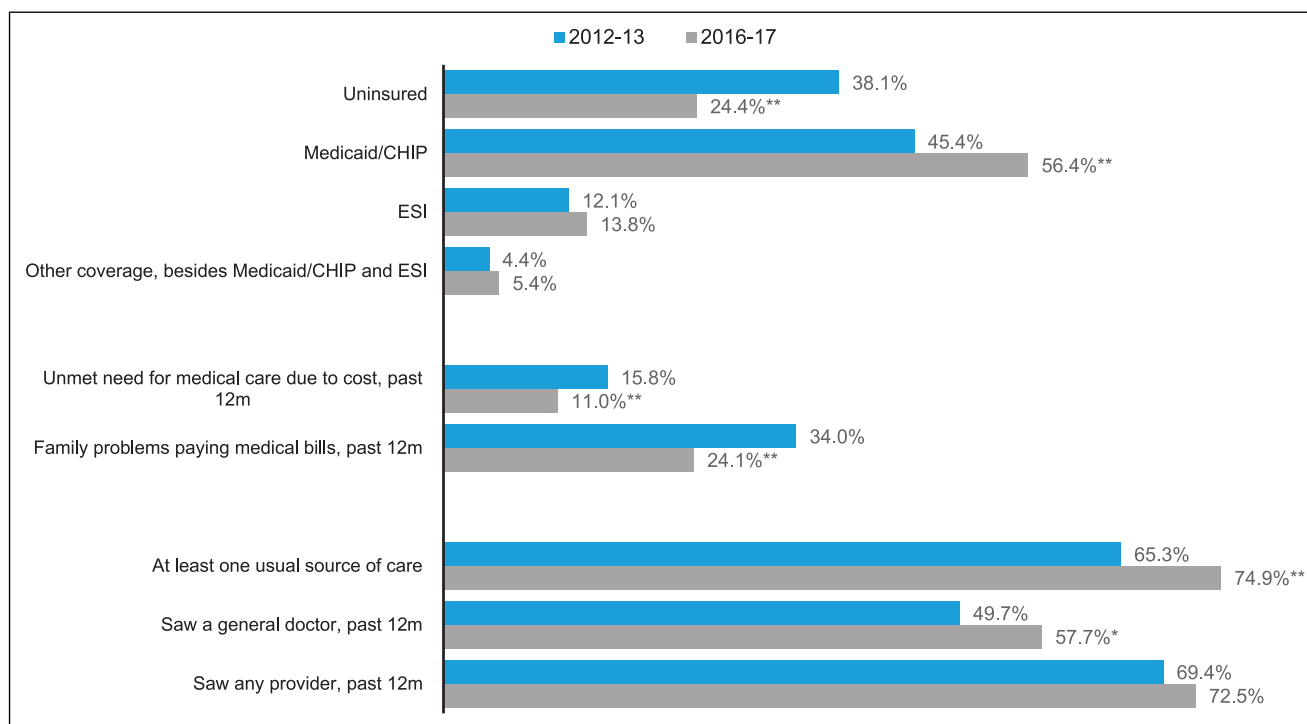
We also estimated an event-study specification that includes indicators for time relative to expansion year equation (2). With each state’s expansion year set to zero, we included four indicators for years  $Post01$ ,  $Post23$ ,  $Pre34$ , and  $Pre56$ . For example, Pennsylvania expanded in 2015, so the indicator for  $Post01$  would be set to 1 in 2015 and 2016,  $Post23$  would be set to 1 in 2017, and  $Pre56$  and  $Pre34$  would be set to 1 in 2010 and 2011–2012, respectively. The indicator for

$Pre12$ , set to 1 in 2013–2014 in the Pennsylvania example, is omitted. This approach allows us to estimate the dynamic effects of the expansion over time, but also to investigate differential trends in expansion vs nonexpansion states prior to expansion. If our model meets the parallel trends assumption, we expect the coefficients on  $\beta1$  and  $\beta2$  to be close to zero and not statistically significant. We also test their joint significance using an F-test which we expect to be insignificant

$$Y_{ist} = \beta1(Pre56_{st}) + \beta2(Pre34_{st}) + \beta3(Post01_{st}) + \beta4(Post23_{st}) + \theta_s + \lambda_t + \Gamma'X_{ist} + \Omega'Z_{ct} + \eta_{ist} \quad (2)$$

Finally, we performed several robustness checks to test the sensitivity of our results. The first excludes parents ages 19–25 because these young adults may have been affected by ACA provisions that allowed parents to keep young adults on their private insurance plans up to age 26. The second excludes states that expanded after 2014 and thereby produces a more balanced event study specification. This specification also helps to address concerns about DD estimates when implementation is staggered over time.<sup>24</sup> The third drops parents with family incomes that exceed the 2010 Medicaid eligibility threshold. Our tax unit income definition is designed to approximate the income used to assess Medicaid eligibility which does not include income of unmarried partners or other family members. However, these units are constructed based on survey responses and therefore contain measurement error, so we further restrict our sample to those whose total family income is also below the relevant threshold. This effectively excludes some low-income parents who may have access to other financial resources.

Ultimately, our DD approach estimates the net effects of the Medicaid expansion on insurance coverage and access to care among previously eligible parents. That is, our estimates reflect both the potential gains in coverage and access due to welcome-mat effects and any access problems due to limited provider capacity. The net effect on access will depend on which spillover mechanism dominates. Because welcome-mat effects due to other ACA provisions would also be expected for previously eligible parents in nonexpansion states, our DD analysis will only detect any welcome-mat effects attributable to participating in the expansion itself. Moreover, previously eligible parents in expansion states had higher Medicaid participation rates and lower uninsured rates than those in nonexpansion states prior to the ACA, so the potential gains from welcome-mat effects may be larger in nonexpansion states. Thus, we may be more likely to detect provider access problems due to capacity constraints than improvements in access due to coverage gains because both expansion and nonexpansion states will likely experience some welcome mat effects but only expansion states are likely to see a large influx of newly eligible individuals using care.



**Figure 1.** Insurance Coverage, Affordability, and Access to Care for Previously Eligible Parents, 2012–2013 and 2016–2017. Source: Authors' analysis of 2010–2017 National Health Interview Survey. Notes: Previously eligible parents are adults ages 19–64 who are the parent of a child under 19 in a state with a 2010 parental Medicaid eligibility threshold below 70% FPL and with incomes below that threshold. The sample also excludes noncitizens and those with Medicare, SSI, and pregnant women. \*  $P < .10$ , \*\*  $P < .05$  on change over time.

This study has several limitations. First, we defined parents as “previously eligible” based on their annual income in the calendar year prior to the survey. If that income is higher than it was prior to the expansion, we may misidentify these parents as newly eligible and thus exclude them from our sample. If their current income is lower than it was prior to expansion, we may assign some newly eligible parents to our previously eligible sample. Given the general upward economic trajectory over this period, we might expect that we are excluding more previously eligible individuals from our sample based on their current incomes, but there is measurement error in both directions. The second major limitation is that we cannot distinguish previously uninsured individuals from previously enrolled individuals. Ideally, we would like to separately examine the effects of the expansion on those who were already enrolled in Medicaid vs those who enrolled due to the expansion, but we would need a different data source to do so. Third, our sample size is relatively modest at approximately 2000 previously eligible parents from 2010 through 2017 which limits our statistical power to detect small effects on our outcomes of interest. Fourth, the NHIS underwent a sample redesign in 2016 which could affect comparability of estimates over this time period. Finally, all measures in our study are self-reported and may be subject to recall or social desirability biases.

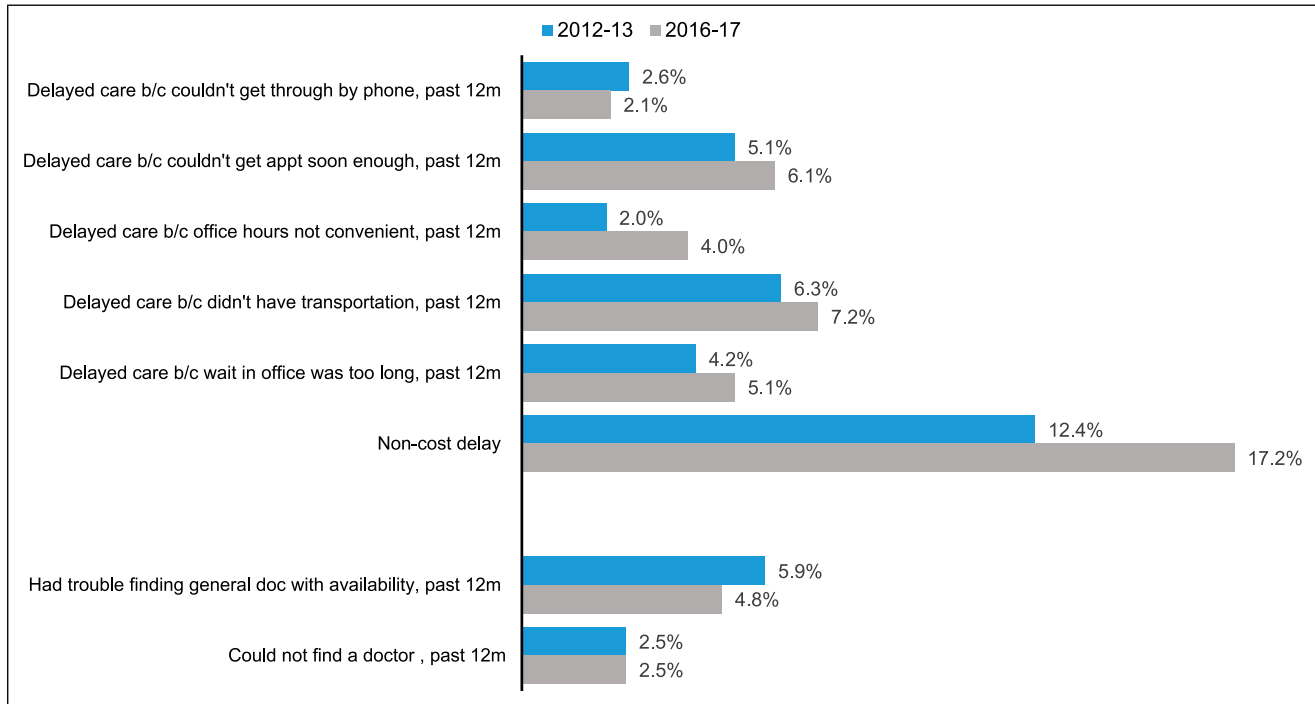
## Results

### *Changes in Coverage, Affordability, Service Use, and Problems Accessing Care Among Previously Eligible Parents, 2012–2013 to 2016–2017*

Between 2012–2013 and 2016–2017, the uninsured rate among previously eligible parents in our sample fell by 13.7 percentage points, from 38.1 percent to 24.4 percent, with a gain in Medicaid coverage of 11.0 percentage points (Figure 1). Accompanying the reductions in uninsurance were reductions in affordability problems and increases in reporting a usual source of care and having a doctor visit in the past year. Specifically, unmet needs for medical care due to cost fell by 4.8 percentage points, a decline of 30 percent, and problems paying family medical bills fell by 9.9 percentage points, a decline of 29 percent. Over the same period, the share of previously eligible parents who reported a usual source of care increased by 9.6 percentage points, and the share with a general doctor visit increased by 7.9 percentage points ( $P < .10$ ).

There were no significant increases in problems accessing care for previously eligible parents over this period, and the rates of such problems were relatively low (Figure 2). In 2016–2017, 4.8 percent of previously eligible parents reported having trouble finding a doctor who would see them and only 2.5 percent reported not being able to find a doctor. About 17.2 percent of





**Figure 2.** Problems Accessing Care for Previously Eligible Parents, 2012–2013 and 2016–2017. Source: Authors' analysis of 2010–2017 National Health Interview Survey. Notes: Previously eligible parents are adults ages 19–64 who are the parent of a child under 19 in a state with a 2010 parental Medicaid eligibility threshold below 70% FPL and with incomes below that threshold. The sample also excludes noncitizens and those with Medicare, SSI, and pregnant women. \*  $P < .10$ , \*\*  $P < .05$  on change over time.

previously eligible parents did report at least one non-cost-related delay in care in 2016–2017, with the most prevalent delays due to lack of transportation (7.2 percent), wait times for an appointment (6.1 percent), and wait times in the office (5.1 percent).

### *Changes in Coverage, Affordability, Service Use, and Problems Accessing Care Among Previously Eligible Parents, by Medicaid Expansion Status, 2012–2013 to 2016–2017*

After the ACA, previously eligible parents in expansion states experienced a 20.9 percentage point reduction in the uninsured rate and a 23.1 percentage point increase in Medicaid coverage from 2012–2013 to 2016–2017 (Table 1). Previously eligible parents in nonexpansion states also saw gains in coverage overall, with an 8.4 percentage point decline in uninsurance over the same period. But these gains appear to come from a mix of Medicaid/CHIP, employer, and other coverage, with only the increase in other coverage being statistically significant.

Previously eligible parents in expansion states also experienced strong affordability improvements on measures of unmet need due to cost and problems paying medical bills (reductions of 10.1 and 14.8 percentage points, respectively), as well as an increase in having a usual source of care (15.9 percentage points). There was also a moderately significant

decline in problems paying medical bills in nonexpansion states from 2012–2013 to 2016–2017, but no other statistically significant reductions in affordability problems or improvements in access among previously eligible parents in nonexpansion states over this period. Previously eligible parents in both expansion and nonexpansion states saw no meaningful changes in individual non-cost delays in care or trouble finding providers over this period, but there was a moderately significant increase in the composite measure of non-cost delays in expansion states.

These descriptive patterns also provide support for the validity of our comparison group. Though previously eligible parents in expansion states were less likely to be uninsured and more likely to have Medicaid than their counterparts in nonexpansion states prior to the ACA Medicaid expansion, there are only two moderately significant differences in affordability or access measures across these two groups in the pre-ACA period (Table 1) and there is no evidence of divergent trends in outcomes in the pre-ACA period (Supplementary Appendix Table A3).

### *Estimated Effects of the ACA Medicaid Expansion on Previously Eligible Parents*

After controlling for observable differences in demographic and socioeconomic characteristics, we find strong evidence in our

**Table 1.** Changes in Outcomes Among Previously Eligible Parents, by Medicaid Expansion Status, 2012–2017.

	Expansion States				Nonexpansion States			
	2012–2013	2014–2015	2016–2017	Difference 2016–2017– 2012–2013	2012–2013	2014–2015	2016–2017	Difference 2016–2017– 2012–2013
	%	%	%	Percentage Points	%	%	%	Percentage Points
Uninsured	30.5	14.1	9.6	–20.9**	42.7++	36.2	34.3++	–8.4**
Medicaid/CHIP	51.9	65.9	75.0	23.1**	41.3++	46.6	43.9++	2.6
ESI	10.4	11.8	11.0	0.6	13.4	12.6	15.7	2.3
Other coverage, besides Medicaid/ CHIP and ESI	7.2	8.2	4.4	–2.8	2.5++	4.6	6.1	3.6**
Unmet need for medical care due to cost, past 12m	16.6	8.0	6.5	–10.1**	15.5	14.1	13.9++	–1.6
Family problems paying medical bills, past 12m	33.5	25.1	18.7	–14.8**	34.4	32.1	27.7++	–6.7*
At least one usual source of care	69.2	81.2	85.2	15.9**	62.8	64.7	67.7++	4.9
Saw a general doctor, past 12m	55.3	68.1	64.4	9.1	45.7	56.8	53.9	8.2
Saw any provider, past 12m	74.9	82.8	77.0	2.1	65.7	73.7	70.5	4.8
Delayed care b/c could not get through by phone, past 12m	1.7	2.7	1.5	–0.3	3.2	1.0	2.8	–0.4
Delayed care b/c could not get appt soon enough, past 12m	4.1	9.2	5.2	1.1	5.9	5.8	7.1	1.3
Delayed care b/c office hours not convenient, past 12m	1.1	3.8	2.6	1.4	2.7	1.2	5.3+	2.7
Delayed care b/c did not have transportation, past 12m	4.0	4.8	8.4	4.4	7.8+	3.8	6.3	–1.5
Delayed care b/c wait in office was too long, past 12m	3.4	5.9	4.7	1.3	4.8	3.8	5.8	1.0
Noncost delay	9.6	17.1	17.4	7.8*	14.3	9.3	17.0	2.6
Had trouble finding general doc with availability, past 12m	7.7	5.4	5.9	–1.8	4.6	5.0	4.1	–0.5
Could not find a doctor, past 12m	1.1	2.9	4.0	2.9	3.5+	3.3	1.5	–2.0

Source: Authors' analysis of 2010–2017 National Health Interview Survey.

Notes: Previously eligible parents are adults ages 19–64 who are the parent of a child under 19 in a state with a 2010 parental Medicaid eligibility threshold below 70% FPL and with incomes below that threshold. The sample also excludes noncitizens and those with Medicare, SSI, and pregnant women. Expansion status is as of January 2017. \* P<.10, \*\* P<.05 on change over time. + P<.10, ++ P<.05 on difference between expansion and nonexpansion states in 2012–2013 and 2016–2017.

DD specification that the expansion increased Medicaid coverage by 21.1 percentage points and decreased uninsurance by 12.6 percentage points among previously eligible parents in our sample (Table 2). We also find that the expansion reduced coverage through sources other than ESI or Medicaid by 4.4 percentage points. These findings suggest that about 60 percent of the gains in Medicaid coverage under the ACA reflect a reduction in uninsurance, with 20 percent potentially reflecting substitution of employer sponsored coverage and 20 percent suggesting substitution of other sources of coverage including dependent or nongroup coverage. We also find evidence that the expansion was associated with increased delays in care due to a lack of transportation by 6.0 percentage points.

Our event study specification finds no evidence of differential trends between expansion and nonexpansion states prior to the ACA, lending credibility to our DD estimates. Moreover, the event study specification indicates that the impacts of the

expansion on coverage were stronger 2 to 3 years following expansion, but that problems with transportation were concentrated in the earlier years of the expansion. This specification also finds that the Medicaid expansion resulted in an increased inability to find a doctor among previously eligible parents in the later years of the expansion.

We perform several sensitivity analyses to test the robustness of our results (Table 3). First, we exclude previously eligible parents under age 26 to avoid confounding with the extension of dependent coverage to young adults beginning in 2011. In this sample, we still find a strong negative effect of the Medicaid expansion on uninsurance and a strong positive effect on Medicaid/CHIP enrollment. There is no longer a significant negative effect of the expansion on other coverage, however, and no increase in care delays due to transportation problems in this population. The effects of the expansion on coverage and non-cost-related delays in care remain

**Table 2.** Estimated Effects of the ACA Medicaid Expansion on Previously Eligible Parents.

	DD		Event Study								
	Average Effect		Pre56		Pre34		F-Test P-value	Post01		Post23	
	B	P-value	B	P-value	B	P-value		B	P-value	B	P-value
Uninsured	-.126	.017**	.076	.344	.000	.998	.380	-.101	.107	-.169	.018**
Medicaid/CHIP	.211	.000***	.026	.712	.010	.816	.931	.180	.000***	.301	.000***
ESI	-.041	.145	-.075	.068*	-.008	.859	.132	-.045	.191	-.056	.205
Other coverage, besides Medicaid/ CHIP and ESI	-.044	.020**	-.027	.389	-.002	.920	.446	-.033	.208	-.077	.016**
Unmet need for medical care due to cost, past 12m	-.043	.268	-.014	.822	-.038	.336	.656	-.056	.223	-.069	.219
Family problems paying medical bills, past 12m	-.050	.207	.045	.521	-.023	.718	.357	-.055	.286	-.062	.361
At least one usual source of care	.060	.276	-.057	.424	-.010	.870	.702	.053	.477	.053	.560
Saw a general doctor, past 12m	.003	.943	.003	.978	.085	.167	.235	.046	.462	.033	.678
Saw any provider, past 12m	-.035	.436	-.093	.462	.001	.981	.568	-.031	.528	-.056	.498
Delayed care b/c could not get through by phone, past 12m	.022	.227	-.021	.660	-.028	.232	.406	.023	.288	-.022	.403
Delayed care b/c could not get appt soon enough, past 12m	.043	.198	.020	.739	.026	.455	.724	.061	.157	.044	.296
Delayed care b/c office hours not convenient, past 12m	-.008	.637	-.006	.872	-.015	.546	.716	-.005	.845	-.036	.181
Delayed care b/c did not have transportation, past 12m	.060	.015**	.059	.324	.021	.374	.606	.079	.017**	.060	.133
Delayed care b/c wait in office was too long, past 12m	.021	.448	.067	.315	.021	.562	.518	.044	.207	.011	.769
Noncost delay	.084	.143	-.020	.875	-.023	.633	.858	.091	.226	.035	.552
Had trouble finding general doc with availability, past 12m	.002	.947	.046	.402	-.016	.668	.173	-.013	.689	.018	.584
Could not find a doctor, past 12m	.028	.145	.027	.595	-.019	.291	.264	.008	.713	.050	.031**

Source: Authors' analysis of 2010–2017 National Health Interview Survey.

Notes: Previously eligible parents are adults ages 19–64 who are the parent of a child under 19 in a state with a 2010 parental Medicaid eligibility threshold below 70% FPL and with incomes below that threshold. The sample also excludes noncitizens and those with Medicare, SSI, and pregnant women. Expansion status is as of January 2017. F-test tests the joint significance of coefficients on pre-expansion years. A significant effect suggests the presence of differential trends between expansion and nonexpansion states in the pre-period. \* P<.10, \*\* P<.05, \*\*\* P<.01.



**Table 3.** Robustness Checks on Estimated Effect of the ACA Medicaid Expansion on Previously Eligible Parents.

	Main Model		Drop <26		Drop Late Expanders		Drop High Family Income	
	B	P-value	B	P-value	B	P-value	B	P-value
Uninsured	-.126	.017**	-.138	.016**	-.180	.011**	-.153	.021**
Medicaid/CHIP	.211	.000***	.170	.001***	.236	.001***	.240	.000***
ESI	-.041	.145	-.018	.578	-.019	.442	-.056	.065*
Other coverage, besides Medicaid/CHIP and ESI	-.044	.020**	-.014	.466	-.037	.058*	-.031	.177
Unmet need for medical care due to cost, past 12m	-.043	.268	-.047	.242	-.075	.051*	-.024	.566
Family problems paying medical bills, past 12m	-.050	.207	-.075	.103	-.070	.118	-.091	.082*
At least one usual source of care	.060	.276	.057	.338	.112	.040**	.039	.443
Saw a general doctor, past 12m	.003	.943	-.022	.664	.028	.575	.002	.966
Saw any provider, past 12m	-.035	.436	-.012	.791	-.047	.351	.013	.817
Delayed care b/c could not get through by phone, past 12m	.022	.227	.006	.756	.018	.363	.033	.117
Delayed care b/c could not get appt soon enough, past 12m	.043	.198	.042	.279	.029	.284	.031	.276
Delayed care b/c office hours not convenient, past 12m	-.008	.637	.019	.235	-.009	.490	.017	.356
Delayed care b/c did not have transportation, past 12m	.060	.015**	.040	.239	.061	.013**	.053	.172
Delayed care b/c wait in office was too long, past 12m	.021	.448	.003	.931	.016	.491	.020	.570
Noncost delay	.084	.143	.067	.312	.076	.064*	.096	.105
Had trouble finding general doc with availability, past 12m	.002	.947	-.010	.803	-.007	.753	.026	.572
Could not find a doctor, past 12m	.028	.145	.016	.468	.024	.228	.025	.368

Source: Authors' analysis of 2010–2017 National Health Interview Survey

Notes: Previously eligible parents are adults ages 19–64 who are the parent of a child under 19 in a state with a 2010 parental Medicaid eligibility threshold below 70% FPL and with incomes below that threshold. The sample also excludes noncitizens and those with Medicare, SSI, and pregnant women. Expansion status is as of January 2017. \* P<.10, \*\* P<.05, \*\*\* P<.01.

relatively consistent when excluding the late expansion states, but the reduction in uninsurance appears somewhat larger and there is additional evidence that the expansion reduced unmet need for medical care due to cost and increased usual source of care among previously eligible parents in this sample. This specification also provides additional credibility that our results are not seriously biased by staggered implementation of the expansions over time.<sup>24</sup>

When we exclude parents with family incomes exceeding the 2010 Medicaid eligibility threshold, we again find strong evidence that the expansion reduced uninsurance and increased Medicaid/CHIP coverage, but no significant effects on transportation-related delays in care. In addition, we find some evidence that the expansion reduced problems paying medical bills for this sample of lower resourced previously eligible parents. Estimates of ESI substitution effects are smaller than the 20 percent in our main model when we limit the sample to those over age 25 (11 percent) and when we exclude late expanders (8 percent), and overall substitution effects including other sources of coverage were smaller across all sensitivity analyses.

The event study specifications for each of these sensitivity analyses are consistent with the main model in finding larger coverage effects in the later years of the expansion, and with any non-cost related care delays concentrated in the early years of the expansion ([Supplementary Appendix Tables A4–A6](#)). Excluding late expanders or those with higher family

incomes suggests that any expansion effects on reducing affordability problems or increasing usual source of care occur in the early years of the expansion, while the increased inability to find a provider in later years of the expansion was only present in the sensitivity model that dropped late expanders. This negative spillover effect of the expansion was not found when excluding those under 26 or those with high family incomes.

## Discussion

This analysis shows that previously eligible parents experienced positive welcome-mat effects as a result of the ACA Medicaid expansion. Our sample of previously eligible parents represents extremely low-income mothers and fathers with tax unit incomes averaging less than 25 percent FPL and family incomes averaging less than 80 percent FPL, and we found that the expansion reduced uninsurance among this population by 12.6 percentage points, or a 40 percent decline from the 2012–13 uninsurance rate of 30.5 percent. Moreover, these effects grew stronger over time with a 17 percentage point drop in uninsurance 2 to 3 years following expansion, or a 55 percent decline from baseline. Though we do see some evidence of substitution of Medicaid for other sources of coverage among this population, it is considerably smaller when we drop those over age 25 and limit our analysis to 2014 expanders. This might suggest that our estimates are

picking up some substitution of dependent coverage or Marketplace coverage obtained prior to the delayed Medicaid expansions.

Overall, we identified very few statistically significant impacts, positive or negative, on access or affordability which may be due to sample size constraints among previously eligible low-income parents. Statistically significant effects of the expansion on unmet needs due to cost and the presence of a usual source of care for previously eligible parents were only evident when we excluded the states that expanded Medicaid after 2014, but the direction of the effects consistently suggests reductions in affordability problems. Moreover, our impact analysis is only designed to capture improvements in access and affordability over and above those experienced in nonexpansion states. Since ACA-related welcome-mat coverage gains occurred in both expansion and nonexpansion states, our DD estimates serve as a lower bound for estimating the overall impact of the ACA on improvements in coverage and associated access and affordability outcomes for previously eligible parents. For example, our descriptive estimates show 30 percent declines in unmet needs due to cost and problems paying family medical bills following implementation of the major coverage provisions of the ACA among our sample of previously eligible parents and a 15 percent increase in having a usual source of care.

Our analysis is more likely to detect an impact on access barriers due to limited provider capacity than to identify access improvements, but we find limited evidence of such effects. In our descriptive analysis, we found no significant increases in problems accessing care for previously eligible parents over this period, and the rates of such problems were relatively low. We did find evidence that Medicaid expansion was associated with increased delays in care due to a lack of transportation in our main model, but this may not reflect a provider capacity issue. Instead, this might indicate that as people gained coverage and sought care, they identified transportation issues that were not evident when they were not able to access care at all. We also found some evidence that the expansion increased inability to find a doctor in the later years of the expansion. While this result was not robust to all specifications, it does raise some concerns that as more people gained coverage over time, capacity constraints might have increased, particularly since the timing of this access problem is also roughly consistent with the expiration of the temporary fee bump for Medicaid providers under the ACA.

Ultimately, despite concerns expressed both prior to ACA implementation and by the Trump administration that the previously eligible population would experience access problems following the Medicaid expansion,<sup>25</sup> our impact analysis finds strong evidence of coverage improvements for previously eligible parents and no consistent evidence of access barriers associated with limited provider capacity. Together, this suggests that the ACA Medicaid expansion generally benefitted low-income parents who met pre-ACA Medicaid eligibility criteria.

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## Supplemental Material

Supplemental material for this article is available online.

## Notes

1. All except Louisiana, which expanded July 2016, had expanded by January 2016.
2. The 12 expansion states in this group are AR, IN, KY, LA, MI, MT, NH, NM, ND, OR, PA, and WV, and the 15 nonexpansion states are AL, FL, GA, ID, KS, MS, MO, NE, NC, OK, SD, TX, UT, VA, and WY. This sample also effectively eliminates the states with generous pre-ACA eligibility for childless adults and those that expanded early under the ACA.
3. Any provider includes a general doctor, an obstetrician/gynecologist, a specialist, a mental health provider, or a nurse practitioner.
4. Problems paying family medical bills and trouble finding and inability to find a doctor were not available in 2010.

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