Early Affordable Care Act Medicaid: Coverage Effects for Low- and Moderate-Income Young Adults

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ABSTRACT

Purpose: The purpose of the study was to evaluate the effects of early Medicaid expansions on young adults, who also benefitted from a private dependent coverage expansion.

Methods: We used the American Community Survey 2008–2013 to study three early expansion states—California, Connecticut, and Minnesota—using difference-in-differences. Control states are weighted combinations of other states and are similar to expansion states in the prepolicy periods. We analyze young adults and subgroups of women and men.

Results: Early Medicaid reduced uninsurance and improved public coverage among low- and moderate-income young adults beyond the private dependent coverage expansion, but results differed across states. California, which targeted up to 200 percent of the federal poverty level (FPL), reduced uninsurance 1.3 percentage points (4.2% relative to mean) and increased public insurance by 1.4 percentage points (14.0%). Connecticut, which targeted up to 56 percent of FPL, had no change to uninsurance but a 5.4 percentage point (42.5%) increase in public coverage. Minnesota’s programs (up to 75 and 250 percent of FPL) produced a 4.2 percentage point (21.9%) decline in uninsurance for their lowest income group, but no measurable changes for their moderate-income group. Young men benefitted more than women. Their uninsurance declined as much as 6.0 percentage points (25.0%, in Minnesota) and their public coverage increased up to 9.1 percentage points (61.5%, in Connecticut).

Conclusions: Medicaid expansion benefits young adults, even those with moderate incomes, and even following a private dependent expansion. Results were larger and concentrated among young men, who historically had little engagement with the program.

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IMPLICATIONS AND CONTRIBUTION

Early Medicaid reduced uninsurance among low-and moderate-income young adults beyond the ACA’s private dependent coverage expansion. Results were especially strong for young men, reflecting men’s lower prior access to Medicaid. We contribute evidence that young adults, especially young men, benefit from Medicaid access to inform state targeting and expansions.
and elderly adults [3]. The connection between Medicaid and welfare was officially broken in the 1990s, but eligibility remained concentrated in specific groups. Nonelderly, nondisabled adults’ eligibility usually relied on their status as custodial parents or being pregnant. Owing to these criteria, women tended to have more access to Medicaid than men.

The early ACA Medicaid expansions

Several states used an ACA option or waivers to implement early versions of Medicaid for low-income adults ahead of the 2014 expansion [4,5]. Like the full expansion they laid the groundwork for, the early programs broadly targeted low-income adults and did not have requirements favoring women. Unlike the full expansion, the early programs had flexibility in income targeting. We analyze how programs with different income requirements affected public health insurance and uninsurance rates, specifically for young adults. We excluded programs that capped enrollment, restricted eligibility to transfers from other public insurance, or only occurred in a single county, since their effects on state insurance outcomes were purposely limited.

The study states—California, Connecticut, and Minnesota—built early Medicaid expansions on existing state or local health insurance programs for low-income adults. These states self-selected to develop early programs and could differ from the rest of the country in political or other ways. It is worth studying what states do in one-off policies. States exercise some authority over Medicaid’s design and implementation since it is a joint state-federal program, and lessons from one state can inform changes in others. The policies are summarized in Table 1 and described in the following paragraph.

In California, the early Medicaid expansion was implemented by counties beginning in 2011 [6]. Some participating counties converted existing programs developed under a demonstration waiver. Others launched early Medicaid through a consortium of programs set up to meet their indigent care responsibilities under Section 17000 of the California Welfare and Institutions Code. Yet others developed new programs [7]. To be eligible, nonelderly adults had to meet their county’s income limit; limits ranged from 25 to 200 percent of FPL. Los Angeles county, the state’s most populous, used a limit of 133 percent of FPL. Cali- formia outreach to enroll people from the county programs, as well as new low-income adults.

### Table 1

<table>
<thead>
<tr>
<th>State</th>
<th>Program name</th>
<th>Date of expansion</th>
<th>Ages targeted</th>
<th>Income limit (% FPL)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>Low Income Health Program</td>
<td>01/11/2010</td>
<td>19–64</td>
<td>200</td>
<td>Primarily conversions of local programs</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Husky D</td>
<td>01/04/2010</td>
<td>19–64</td>
<td>56</td>
<td>Conversion of state program</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Medical Assistance (MA)</td>
<td>01/03/2010</td>
<td>21–64</td>
<td>75</td>
<td>Conversion of state program</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Medical Assistance (MA)</td>
<td>01/08/2011</td>
<td>21–64</td>
<td>250</td>
<td>Conversion of state program</td>
</tr>
</tbody>
</table>

FPL = federal poverty level.
Source: Kaiser Family Foundation (www.kff.org) and state websites.

Connecticut’s Medicaid expansion for childless adults began in 2010. The program offered new eligibility to nonelderly adults with an income less than 56 percent of FPL (One county allowed up to 68 percent of FPL, which affected a minority of the state’s low-income population [8]). It replaced a state program tied to a cash assistance program for very low-income individuals. The program was limited to this population until 2014, when it began accepting participants up to 138 percent of poverty in accordance with the ACA guidelines.

Minnesota implemented two early Medicaid programs for low-income, nonelderly adults. In 2010, it expanded Medicaid to adults up to 75 percent of federal poverty, replacing an existing public health insurance program tied to the state’s cash assistance program. The second in 2011 reached adults up to 250 percent of poverty. Both policies included transfers from previous state programs and enrollment of new individuals, but the state enrolled mostly transfers [9].

Young adults and access to health insurance

Adults aged 19–25 years are a difficult-to-reach demographic sometimes referred to as “young invincibles” for their relatively good health and tendency to forgo health insurance. Young adults during the early 2010s had entered adulthood during the Great Recession. The recession officially lasted from December 2007 to June 2009, but young adults who entered the workforce in the recession faced diminished initial employment prospects and are projected to have lower lifetime earnings [10]. Since most insurance coverage in the US is employer-based [11], this group was vulnerable to being uninsured. Significant gaps in health insurance literacy compound the issue for young adults [12,13].

Young adults tend to reduce engagement with health services as they age out of dependent coverage [14]. In 2010, the ACA extended private dependent health insurance coverage to adult children up to their 26th birthdays to reduce loss of coverage and health-care access. This has helped improve coverage among young adults [15]. Even so, recent studies have found that the private expansion did not eliminate coverage disparities by income and may have exacerbated them, since adult children must have insured parents to benefit [16]. The early Medicaid expansions in California, Connecticut, and Minnesota offer an opportunity to learn whether public insurance reduced uninsurance for low- and moderate-income young adults, who may not have benefitted from the private expansion as much as their higher income peers. Research has found that the expansions improved public coverage [9,17,18], but has not estimated effects for young adults who were affected by the private expansion. Also, men had historically low engagement with Medicaid and were among the groups that benefitted most from the private dependent provision [19], raising the question of how much early Medicaid affected men under 26. This project addresses these questions.

Research questions

We hypothesize that early Medicaid expansions in California, Connecticut, and Minnesota increased public insurance enrollment and reduced uninsurance for low- and moderate-income young adults. Men’s historically lower access to Medicaid could mean that they stood to experience greater gains; we test for evidence of this claim in subgroup analyses. Our study’s contributions are (1) a focus on how early Medicaid programs affected
a hard-to-reach population of low- and moderate-income young adults; (2) analyses of how programs targeting a range of income groups affected young women and young men; and (3) the use of a data-driven process to build control states closely resembling the early Medicaid states.

Methods

We use data from the public version of the American Community Survey (ACS) from 2008 to 2013 [20]. The ACS is an annual household survey that collects information on income, family structure, demographics, and—beginning in 2008—health insurance. It is representative at the national and state levels, and large sample sizes make this survey ideal for evaluating state policies and analyzing subpopulations [21]. Because these data are publicly available, the overseeing Office for Protection of Human Subjects determined that this project did not require human subjects review.

The health insurance measures reflect respondents’ coverage status on the survey day. The three binary outcomes studied are private insurance coverage (including employer and individually purchased plans), public insurance coverage (Medicaid and other types of public insurance), and uninsurance (lack of health insurance).

ACA Medicaid eligibility is determined after converting family income and size to percent of FPL. We used federal guidelines to translate the past 12 months’ income for the individual’s family (defining family as public insurance programs do [22]) into percent of FPL [23]. Individuals could churn in and out eligibility for Medicaid because of income fluctuations, but this is true in real life as well as in this study. The study population was then limited to the young adults affected by the policies: nondisabled, childless, citizens with qualifying incomes and ages. The sample sizes are 279,391 for California; 18,631 for Connecticut; 10,380 for Minnesota’s expansion to 75 percent of FPL; and 46,897 for Minnesota’s expansion to 250 percent of FPL.

Synthetic control states

Studies with control groups are more informative than pre-post analyses, but there is significant difficulty in finding appropriate controls, and the choice is usually one of convenience. For the early Medicaid expansions, the task is especially difficult since the participating states were fundamentally different from others that opted to wait for the full ACA expansion or not to expand Medicaid [24]. Moreover, there are many possible control states since most did not implement early Medicaid, and different choices potentially yield vastly different conclusions. We avoid making ad-hoc control selections by using an approach relatively new in public health research. For each study state, we use data from 2008 until the policy implementation year to create a weighted combination of potential control states; the resulting “synthetic” control closely resembles the early Medicaid state during its prepolicy period [25]. Data on uninsurance, demographics (age, sex, education, race, ethnicity), income, and pathways to health insurance (marital status, employment status) from the prepolicy periods are used to build the weights that define each control state. Details are in the Appendix.

Analyses

We conduct difference-in-differences (DD) regressions for each pair of study and control states, implemented as linear probability models. Although synthetic control states are newer in health research, regression produces familiar, easily interpretable results. The DD model controls for age, sex, education, race, ethnicity, student status, income, marital status, and employment status. It includes state fixed effects that control for the effects of time-invariant state characteristics [26], such as state policy culture, which can affect how health insurance policies are implemented [24,27]. It includes year fixed effects that control for annual changes that affect all states, and state-year unemployment rates to control for state-specific macroeconomic trends. It is impossible to determine in the ACS whether the insurance outcomes reported reflect exposure to early Medicaid in the year a policy was implemented. Each regression omits the calendar year containing most or all the first six months of policy implementation to demarcate prepolicy and postpolicy periods. The analysis population in each model is limited to young adults newly eligible for Medicaid in the early expansion. For example, Connecticut’s program targeted individuals under 56 percent of federal poverty, so only young adults below that income are in the Connecticut analyses. Standard errors are heteroskedasticity-robust and significance is noted if an estimate’s p-value meets $p < .10$, $p < .05$, $p < .01$, or $p < .001$. We focus the results discussion on estimates of the post-policy period in the study states.

Results

Individual and state characteristics

Table 2 presents demographic characteristics, and Figure 1 provides visual evidence that study and control states are similar in uninsurance trends and levels during prepolicy periods. The process that creates control states accounts for the importance of individual characteristics in predicting uninsurance. The regressions also control for these characteristics.

California’s policy affected young adults with very high levels of uninsurance, even though the state’s maximum income threshold was not especially low at 200 percent of FPL. Thirty-one percent of young adults in this group were uninsured, 60 percent were privately insured, and 10 percent were publicly insured. The low percentage of public insurance suggests substantial room to improve coverage. California’s control state is a combination of Texas (29.7%), Michigan (29.2%), Illinois (21%), New Mexico (12.6%), Rhode Island (5.2%), and Florida (2%).

The Connecticut policy focused on a group of very low-income young adults with high rates of private health insurance. In Connecticut, only about one-eighth of young adults under 56 percent of FPL were uninsured, with a surprisingly high 76 percent covered by private health insurance, and 13 percent by public insurance. The high private coverage in this very low-income group suggests that switching from private to public coverage, or “crowding out,” could be possible. Connecticut’s control state was made up of Iowa (28.1%), North Dakota (24.4%), Hawaii (21.6%), Vermont (19.4%), New Mexico (6.4%), and Delaware (2%).

Minnesota implemented two early expansions with different income thresholds and different prepolicy periods, so a separate
Table 2
Characteristics of young adults in early Medicaid expansion and control states

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>California (up to 200% FPL)</th>
<th>Control for California</th>
<th>Connecticut (56% FPL)</th>
<th>Control for Connecticut</th>
<th>Minnesota (75% FPL)</th>
<th>Control for Minnesota</th>
<th>Minnesota (250% FPL)</th>
<th>Control for Minnesota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uninsured</td>
<td>.307 (.461)</td>
<td>.325 (.468)</td>
<td>.129 (.336)</td>
<td>.156 (.363)</td>
<td>.192 (.394)</td>
<td>.205 (.404)</td>
<td>.210 (.407)</td>
<td>.215 (.411)</td>
</tr>
<tr>
<td>Private insurance</td>
<td>.601 (.490)</td>
<td>.607 (.488)</td>
<td>.757 (.429)</td>
<td>.734 (.442)</td>
<td>.666 (.472)</td>
<td>.702 (.457)</td>
<td>.684 (.465)</td>
<td>.719 (.450)</td>
</tr>
<tr>
<td>Public insurance</td>
<td>.100 (.301)</td>
<td>.0755 (.264)</td>
<td>.127 (.333)</td>
<td>.105 (.307)</td>
<td>.152 (.359)</td>
<td>.104 (.305)</td>
<td>.117 (.321)</td>
<td>.0731 (.260)</td>
</tr>
</tbody>
</table>

Individual characteristics

<table>
<thead>
<tr>
<th>State characteristic</th>
<th>Unemployment (by state-year)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.01 (1.619)</td>
<td>7889 (.941)</td>
</tr>
<tr>
<td></td>
<td>100,586</td>
<td>178,805</td>
</tr>
</tbody>
</table>

Data source is the American Community Survey, 2008 to 2013. Standard deviations are in parentheses. Control state compositions are described in the main text. Policy implementation years excluded to correspond with analyses.


Effects of early Medicaid expansions

Table 3 presents regression results on the effects of the early Medicaid expansions. Since the regressions are conducted as linear probability models, we interpret estimates as percentage point changes and translate them to percent changes relative to dependent variable means. The estimates for uninsurance, private insurance, and public insurance are directly comparable, summing to roughly zero in each set of analyses.

In California, the early Medicaid expansion increased health insurance coverage and reduced the uninsurance rate by 1.3 percentage points among young adults. This appears to be driven by enrollment in early Medicaid, as public insurance increased by 1.4 percentage points in the same period. The changes are not large in magnitude, but they are very precise ($p < .001$) due to the large sample size ($N \approx 280,000$), and they translate to a 4.2 percent decline in uninsurance and a 14.0 percent increase in public coverage relative to dependent variable means. We estimated no changes to private coverage.

Contrary to expectations, Connecticut experienced no change to its uninsurance rate among its young adults. However, the state experienced changes to the composition of insurance coverage types, with public insurance enrollment increasing by 5.4 percentage points, translating to a large 42.5 percent increase. Changes in private insurance and uninsurance were not statistically distinguishable from zero. The very high rate of private coverage in the state—over 75 percent for this extremely low-income group—is consistent with the possibility that young adults may have switched from private insurance to the early Medicaid program, and previous studies on Connecticut’s reform found this occurred among a broader age group [9,18].

Minnesota’s first early Medicaid expansion to those under 75 percent of FPL produced no detectable changes to the insurance coverage types for this population. The state’s second expansion to those under 250 percent of FPL produced a 4.2 percentage point decrease in uninsurance for young adults, which translates to a notable 21.9 percent decrease. The increases in private and public coverage roughly account for the improved uninsurance, but neither reaches significance. We may not be able to detect the state’s relatively few new enrollees [9], especially since the sample size is relatively small ($N \approx 10,400$). The effect on uninsurance appears to be split between increases in private and public coverage, and each of these is too small in magnitude to meet the bar of significance. In Minnesota’s second expansion to 250 percent of FPL, none of the effects estimated are statistically distinguishable from zero, but they suggest that uninsurance declined, and with increased public coverage likely to play a more important role than private insurance.

Differences by sex

We conducted subgroup analyses to test for evidence of heterogeneous effects by sex. Table 4 presents the DD results for female and male subgroups. The consistent theme is that young men disproportionately benefited from the early Medicaid.

synthetic control state was built for each. The state’s first early Medicaid policy targeted those under 75 percent of FPL. About 19 percent of the young adults in this group were uninsured, with a very high 67 percent covered by private health insurance, and 15 percent covered by public insurance. The control state for this policy is similar and is made up of Iowa (50.9%), Vermont (15.4%), Hawaii (15.3%), New Hampshire (8.3%), Delaware (7.9%), and Montana (2.3%). In Minnesota’s second expansion up to 250 percent of FPL, uninsurance was higher at 21 percent, private coverage in the state was still high around 68 percent, and 11 percent had public insurance. The control state for this policy was made up of Iowa (82.9%), Hawaii (11.5%), North Dakota (5.0%), and Utah (.5%).
programs compared to young women. In California, the improvements to uninsurance among women were small and insignificant, whereas the change for men was a precise 2.1 percentage point (6.2%) decline in uninsurance. Both women and men experienced small, insignificant changes to their private coverage, but men saw an increase, while women saw a decrease. Public coverage increased for women by 1.0 percentage point (3.2%) increase over women’s mean. In contrast, men had a 1.8 percentage point (18.9%) increase relative to their mean. In Connecticut and Minnesota, none of the effects described for the pooled models were detectible for women in the subgroup analyses. For men in Connecticut, a 3.2 percentage point (6.5%) decline in uninsurance was borderline significant (p < .10). Their private insurance declined by 4.3 percentage point (5.9%)

### Table 3

<table>
<thead>
<tr>
<th>California</th>
<th>Connecticut</th>
<th>Minnesota</th>
<th>Minnesota</th>
</tr>
</thead>
<tbody>
<tr>
<td>(200% FPL)</td>
<td>(56% FPL)</td>
<td>(75% FPL)</td>
<td>(250% FPL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Uninsurance</th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uninsurance</td>
<td>-.013*** (.004)</td>
<td>-.022 (.013)</td>
<td>-.042** (.021)</td>
</tr>
<tr>
<td>Private insurance</td>
<td>-.001 (.004)</td>
<td>-.017 (.014)</td>
<td>.033 (.021)</td>
</tr>
<tr>
<td>Public insurance</td>
<td>.014*** (.002)</td>
<td>.054*** (.011)</td>
<td>.013 (.017)</td>
</tr>
<tr>
<td>N</td>
<td>279,391</td>
<td>18,631</td>
<td>10,380</td>
</tr>
</tbody>
</table>

Data source is the American Community Survey, 2008–2013. Young adults included are 19–25 in California and Connecticut and 21–25 in Minnesota. Model headers indicate income eligibility for Medicaid as a percent of the federal poverty level (FPL). Regressions are linear probability models. Standard errors are robust to heteroskedasticity.  

*p < .05, ***p < .001.

### Table 4

<table>
<thead>
<tr>
<th></th>
<th>California</th>
<th>Connecticut</th>
<th>Minnesota</th>
<th>Minnesota</th>
</tr>
</thead>
<tbody>
<tr>
<td>(200% FPL)</td>
<td>(56% FPL)</td>
<td>(75% FPL)</td>
<td>(250% FPL)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Uninsurance</th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uninsurance</td>
<td>-.004 (.005)</td>
<td>-.011 (.018)</td>
<td>-.017 (.029)</td>
</tr>
<tr>
<td>Private</td>
<td>-.008 (.006)</td>
<td>.01 (.020)</td>
<td>.031 (.032)</td>
</tr>
<tr>
<td>Public</td>
<td>.010*** (.004)</td>
<td>.016 (.016)</td>
<td>-.009 (.025)</td>
</tr>
<tr>
<td>N</td>
<td>128,368</td>
<td>8,960</td>
<td>4,720</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Uninsurance</th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uninsurance</td>
<td>-.021*** (.005)</td>
<td>-.032 (.019)</td>
<td>-.060* (.029)</td>
</tr>
<tr>
<td>Private</td>
<td>.004 (.005)</td>
<td>-.042* (.020)</td>
<td>.033 (.029)</td>
</tr>
<tr>
<td>Public</td>
<td>.018*** (.003)</td>
<td>.091*** (.016)</td>
<td>.03 (.023)</td>
</tr>
<tr>
<td>N</td>
<td>151,023</td>
<td>9,671</td>
<td>5,660</td>
</tr>
</tbody>
</table>

Data source is the American Community Survey, 2008–2013. Young adults included are 19–25 in California and Connecticut and 21–25 in Minnesota. Model headers indicate income eligibility for Medicaid as a percent of the federal poverty level (FPL). Regressions are linear probability models. Standard errors are robust to heteroskedasticity.  

* p < .10, ** p < .05, *** p < .01, **** p < .001.
Discussion

Improving health insurance coverage is a primary goal of the ACA. While coverage in and of itself does not guarantee timely access to care, reducing uninsurance an important part of improving Americans’ health and health care. Despite the much-lauded private insurance expansion to young adults, we found there was still a role for public insurance for young adults, even those with moderate incomes. We estimated that early Medicaid expansions reduced uninsurance among young adults, primarily among young men. Policies that targeted very low-income individuals (up to 56 or 75 percent of FPL) reduced young men’s uninsurance by up to a quarter and increased their public insurance coverage; public coverage increased by over 60 percent in one instance. We also found evidence that a moderate-income expansion in California produced substantial improvements—again, disproportionately for men, whose uninsurance was reduced by 6.2 percent.

We found that public insurance enrollment in California and Connecticut increased. The enrollment effects measured are underestimates since transfers of eligible adults from existing programs to early Medicaid wash out in the analysis. Private coverage rates among the young adults targeted by early Medicaid increased in California, may have declined in Connecticut, and remained static in Minnesota. In Connecticut’s early Medicaid program, we found suggestive evidence that some young adults moved from private insurance to public insurance, and this is consistent with an early evaluation of the program [9] as well as a study finding that employment declined as Medicaid became an alternative to employer-based coverage [18]. Switching to Medicaid rather than paying for private coverage is not any state’s goal, but it is likely to be a positive outcome for the extremely low-income target population since, under Medicaid, they pay no premiums and have little or no cost-sharing. These findings show what can result when states move beyond traditional Medicaid populations, including moderate-income groups. The findings can inform other states in developing new waiver populations, targeted marketing efforts, or state-funded expansions. Of course, coverage is a key component of health-care access, but not the entirety. Medicaid patients have lower access to care than those with private insurance, and specialty care is especially difficult to arrange [28,29]. For their part, providers cite administrative difficulties and low reimbursement as some reasons for not seeing more Medicaid patients [30]. States expanding Medicaid to improve population health should consider contemporaneous plans to increase provider participation.

Limitations

There are several limitations to this study. Our findings reflect the study programs, although we believe they produce insights on need, targeting, and enrollment for public health insurance that can benefit other states. The programs were short-lived, so we could not perform long-range follow-up. The model does not control for time-varying unobserved state characteristics or county-level differences. Our interpretations are based on changes in repeated annual data, not tracking of individuals. Finally, it was beyond the scope of this project to study utilization or health outcomes that could result from gaining access to early Medicaid.

Supplementary Data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jadohealth.2020.05.029.

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