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# Early Impact of the Affordable Care Act on Health Insurance Coverage of Young Adults

*Joel C. Cantor, Alan C. Monheit, Derek DeLia, and Kristen Lloyd*

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**Research Objective.** To evaluate one of the first implemented provisions of the Patient Protection and Affordable Care Act (ACA), which permits young adults up to age 26 to enroll as dependents on a parent's private health plan. Nearly one-in-three young adults lacked coverage before the ACA.

**Study Design, Methods, and Data.** Data from the Current Population Survey 2005–2011 are used to estimate linear probability models within a difference-in-differences framework to estimate how the ACA affected coverage of eligible young adults compared to slightly older adults. Multivariate models control for individual characteristics, economic trends, and prior state-dependent coverage laws.

**Principal Findings.** This ACA provision led to a rapid and substantial increase in the share of young adults with dependent coverage and a reduction in their uninsured rate in the early months of implementation. Models accounting for prior state dependent expansions suggest greater policy impact in 2010 among young adults who were also eligible under a state law.

**Conclusions and Implications.** ACA-dependent coverage expansion represents a rare public policy success in the effort to cover the uninsured. Still, this policy may have later unintended consequences for premiums for alternative forms of coverage and employer-offered rates for young adult workers.

**Key Words.** Health care reform, health insurance regulation, health policy, health economics

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One of the first implemented provisions of the Patient Protection and Affordable Care Act (ACA) permits young adults aged up to 26 years to obtain health insurance as dependents on a parent's private health plan. This provision recognized that young adults are the age group most likely to lack health insurance. In 2009, the year before the ACA-dependent coverage expansion, 31.4 percent of adults in the targeted age range, 19–25 years old, lacked coverage, nearly double the national rate (DeNavas-Walt, Proctor, and Smith 2011).

This high likelihood of being without coverage has compromised young adults' access to health services, their financial protection against incurring substantial medical debt, and the ability to address their frequently observed obesity and alcohol and tobacco use that lead to health and economic problems in later adulthood (Merluzzi and Nairn 1999; Callahan and Cooper 2005; Nicholson et al. 2009).

The ACA-dependent coverage provision builds upon laws enacted by nearly two thirds of the states that sought to expand young adult coverage (Cantor et al. 2012). Two evaluations of the state-level expansions found increases in young adult-dependent coverage that were offset by reductions in other sources of coverage (Levine, McKnight, and Heep 2011; Monheit et al. 2011). One of these studies tested the impact of these state policies on the number of uninsured young adults and found no net impact (Monheit et al. 2011). ACA-dependent coverage rules promise to improve upon prior state expansions, since the federal law includes more liberal eligibility requirements and it extends to young adults whose parents are enrolled in large self-insured group plans that are exempt from state laws.

A variety of early descriptive analyses suggest a substantial impact of the ACA's dependent coverage provision (Martinez and Cohen 2011; Mendes 2011; Fronstin 2012). One analysis estimated that the number of young adults (aged 19–25 years) with health insurance increased by 2.5 million between September 2010 and June 2011 without a corresponding coverage increase for those aged 26–35 years (Sommers and Schwartz 2011). These trends are consistent with a 2011 study that estimated large numbers of employers enrolling young adult dependents under the ACA rules (Claxton et al. 2011).

To date, most analyses of the ACA young adult provision have not specifically examined its direct impact on dependent coverage and none have rigorously identified the early impact of the federal law apart from the contribution of prior state laws and prevailing economic conditions. Although Sommers and Kronick (2012) found a statistically significant increase in private coverage of young adults eligible to enroll as dependents under the ACA

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Address correspondence to Joel C. Cantor, Sc.D., Professor and Director, Center for State Health Policy, Rutgers University, 112 Paterson Street, 5th Floor, New Brunswick, NJ 08840; e-mail: jcantor@ifh.rutgers.edu. Alan C. Monheit, Ph.D., is with the School of Public Health, University of Medicine and Dentistry of New Jersey, Piscataway, NJ and is with the National Bureau of Economic Research, Piscataway, NJ. Derek DeLia, Ph.D., Kristen Lloyd, M.P.H., are with the Center for State Health Policy, Rutgers University, New Brunswick, NJ.

(aged 19–25 years) relative to a slightly older age group (aged 26–34 years) between 2005–2009 and 2010, their study did not control for possible differences between ACA-targeted young adults and their control group in demographic characteristics, eligibility for state-dependent coverage expansions, or for economic trends. As regards the latter, the weak economy over this period made it more difficult for young adults to find jobs that offer coverage, and encouraged them to retain student status or live with their parents, possibly contributing to increased enrollment through a parent’s plan. The goal of our study is to provide the first rigorous analysis of this ACA coverage provision, which controls for young adult characteristics, economic trends, and the inter-relationship between the ACA young adult provisions and prior state-level reforms.

*ACA Young Adult Dependent Coverage Provisions and Prior State Laws*

Beginning with the first plan renewal as of September 23, 2010, the ACA requires health insurers and employer group plans, including self-insured plans, to provide coverage to dependents under age 26 years (P.L. 111–152 §2301). This requirement applies to all adult children under age 26 years regardless of marital status, residency, financial dependency, or other characteristics. Plans held prior to the ACA, known as “grandfathered plans,” are not required to enroll young adult dependents who are offered employer-sponsored coverage. However, beginning in 2014 even grandfathered plans will be required to cover young adult dependents regardless of whether they are offered a plan. Plans covering young adult dependents may not treat them differently than other dependents in determining benefits or premiums. The ACA also extended the same favorable tax treatment afforded to other employer-sponsored insurance premiums to the coverage of young adult dependents through the end of the tax year of their 26th birthday.

Prior state laws apply only to state regulated plans, not large employer self-funded plans. Moreover, all but a few states implementing dependent coverage expansions limited eligibility to unmarried young adults (Cantor et al. 2012). Most of the reform states also imposed state residency requirements, and some required or permitted insurers to charge added premiums for enrolled young adults. The federal law does not include any of these limitations, and it preempts these state restrictions for young adults under age 26 years.

## DATA AND METHODS

### *Data Sources and Study Population*

Data are drawn from the 2005–2011 Annual Social and Economic Supplement to the Current Population Survey (CPS), which measures coverage status for calendar years 2004–2010 (DeNavas-Walt, Proctor, and Smith 2011). To adjust for potentially confounding trends in state economic conditions and health insurance markets, we link CPS records to annual state-level data on unemployment rates (BLS n.d.), employer health insurance offer rates (Medical Expenditure Panel Survey-Insurance Component (MEPS) 2010b), and the extent of employer self-insurance (Medical Expenditure Panel Survey-Insurance Component (MEPS) 2010a). We exclude Hawaii and Massachusetts from the analysis because coverage in those states is likely to be influenced by their respective employer and individual coverage mandates.<sup>1</sup>

Two age groups are included in our analysis. First, we define the young adult population targeted for dependent coverage by the ACA as persons aged 19–23 years who are not full-time students and all young adults aged 24 or 25 years regardless of student status. Prior to the ACA, full-time students up to age 23 years were generally eligible to remain on a parent's plan. Second, we use persons aged 27–30 years who are not eligible for dependent coverage under the ACA as a comparison group. Individuals reported as age 26 years are excluded from the analysis because the CPS does not provide sufficient information to determine their age-eligibility during the portion of 2010 when the ACA-dependent coverage rules were in effect. Our analysis sample includes 85,158 ACA-targeted young adults and 71,203 non-target comparison group observations.

### *Analytic Approach*

After describing changes in sources of coverage between ACA-targeted and comparison groups from 2004 to 2010 and evaluating differences in characteristics of these groups over the study period, we treat implementation of the ACA's dependent coverage expansion as a "natural experiment" and consider how young adult coverage changed after implementation. To do so, we use a "difference-in-differences" (DD) framework to examine changes in health insurance status of the group targeted by the ACA from the pre- to post-implementation period relative to the change in the non-targeted group. This contrast is made through a series of multivariate linear probability models that

adjust for non-policy-related factors that may affect coverage as well as eligibility for state-dependent coverage expansions.

Trends in four health insurance outcomes are examined over the study period: (1) private dependent coverage other than as a dependent of a spouse living in the same household; (2) private coverage as a policyholder or dependent of a spouse living in the same household; (3) public coverage, including Medicaid or Medicare; and (4) no coverage during the year (i.e., uninsured). Study subjects with more than one type of coverage during the year are recorded in each applicable category; thus, the categories other than “no coverage” are not mutually exclusive. For example, 18.1 and 35.2 percent, respectively, of the ACA-targeted and comparison groups with non-spousal dependent coverage had some other form of coverage reported in 2010. These percentages did not change significantly with ACA implementation between 2009 and 2010.

Regression models for each coverage outcome are specified as follows, with  $COV_{ist}$  representing the respective dichotomous coverage outcome variable for individual  $i$ , living in states, and in year  $t$ :

$$\begin{aligned}
 COV_{ist} = & a_1 + a_2FED\_TARGET_i + a_3ST\_TARGET_{is} + a_4ST\_POLICY_{st} \\
 & + a_5TREND_t + \sum_t b_tYEAR_t + \sum_j c_jI_j + \sum_k d_kX_{kit} \\
 & + \sum_r f_rZ_{rst} + \sum_s g_sSTATE_s + \sum_s h_s(STATE_s^*TREND_t) + e_{ist}
 \end{aligned}$$

Two dichotomous variables,  $FED\_TARGET_i$  and  $ST\_TARGET_{is}$ , indicate whether young adults would have met the eligibility requirements for expanded dependent coverage, respectively, under the ACA or a state law, regardless of whether these laws were actually in effect at the time of the CPS interview. Thus, these target variables are time-invariant in our models and control for underlying propensity of these individuals to have or not have specific types of coverage throughout the study period. Eligibility for the ACA is based solely on age. Reflecting the provisions of individual state laws,  $ST\_TARGET_{is}$  is assigned based on the young adults’ state of residence, age, marital status, whether they have their own dependents, whether they live with a parent, and their student status. The CPS lacks information about the insurance status of the parents of young adults not living with them, for example, whether parents are covered by a state-regulated plan. Thus,  $ST\_TARGET_{is}$  does not take parental insurance status into account. (As discussed below, our models include state-level variables to adjust for likelihood that parents are enrolled in state-regulated plans.)

ST\_POLICY<sub>st</sub> is a state policy implementation flag that is set to 1 for all individuals living in a state with a dependent coverage expansion during the years in which the expansion was in effect. This variable equals 0 for all individuals living in an expansion state during the pre-expansion years and for individuals in non-expansion states during all study years. Implementation of the federal reform began September 23, 2010, but the CPS does not provide information on the timing of health insurance coverage during the calendar year. Thus, we use the 2010 year indicator variable to flag federal policy implementation, which provides a conservative estimate of policy impact, since it includes a long period of time when the federal policy was not in effect. The YEAR<sub>2010</sub> and ST\_POLICY<sub>st</sub> indicator variables are used only to mark the time at which state and federal policies went into effect, and therefore, do not vary by any individual characteristics, including whether the individual meets the criteria for federal or state coverage expansion.

The models also include a series of interaction terms  $I_j$ , indexed by subscript  $j$ , among the target population and policy implementation indicator variables (described further in the Appendix). We use alternative specifications of the  $I_j$  terms to identify the policy impact of ACA young adult-dependent rules. All the specifications include the interaction of FED\_TARGET<sub>i</sub> and YEAR<sub>2010</sub>. The coefficient on this interaction term is the DD estimate of the impact of the ACA dependent coverage expansion. The first specification also includes the interaction of ST\_TARGET<sub>is</sub> and ST\_POLICY<sub>sb</sub>, effectively controlling for individuals' eligibility for state dependent coverage expansions prior to the ACA.

In the second specification,  $I_j$  includes all possible two-way, three-way, and four-way interactions among these state and federal target and implementation variables (i.e., FED\_TARGET<sub>i</sub>, YEAR<sub>2010</sub>, ST\_TARGET<sub>is</sub>, and ST\_POLICY<sub>st</sub>) (with redundant terms omitted to avoid perfect collinearity). In these models, two of the  $c_j$  coefficients are used to generate DD estimators identifying ACA policy impact. First, the coefficient on the interaction of the variables indicating federal eligibility and implementation (i.e., FED\_TARGET<sub>i</sub>\*YEAR<sub>2010</sub>) is the DD estimator measuring the policy impact on young adults eligible for dependent coverage under federal rules, but not eligible under any state law. Next, the coefficient on the four-way interaction between federal and state eligibility and policy indicators (i.e., FED\_TARGET<sub>i</sub>\*YEAR<sub>2010</sub>\*ST\_TARGET<sub>is</sub>\*ST\_POLICY<sub>st</sub>) measures how the ACA's policy impact differs for young adults who were eligible both under prior state expansions and the federal expansion relative to those eligible under the federal expansion only. The sum of these two coefficients represents

the incremental effect of the ACA's dependent coverage expansion on those who are jointly targeted by federal and prior state policies simultaneously.

As a robustness check, we estimate a third set of models that is limited to residents of 18 states and the District of Columbia that did not enact dependent coverage reforms prior to the ACA. These models test the impact of the ACA without the potential complicating influence of state reforms. Although similar to the full model described above, this specification avoids the need for state target population and policy implementation variables and associated interaction terms. In addition, because the availability of dependent coverage might affect young adults' decisions about whether to enroll as full-time students, we conducted tests of the sensitivity of our results to the inclusion of student variables and the exclusion of full-time students ages 19–23 from our models. Finally, we confirm our results by estimating a “placebo” model without data for coverage year 2010 that falsely assumes that the ACA was implemented in 2009. Additional details about model specifications are provided in an Appendix.

All regression models control for non-policy factors that could affect coverage trends. Specifically, the models include individual-level variables  $X_{kit}$  (indexed by variable  $k$  for person  $i$  in year  $t$ ) to adjust for age, gender, race and ethnicity, student status, marital status, living with a parent, household income as a percentage of the federal poverty line, and perceived health status. For each state and year, the models also include state-level variables  $Z_{rst}$  (indexed by variable  $r$  for state  $s$  in year  $t$ ) that include the unemployment rate (to adjust for state trends in economic conditions), the percentage of private sector employees working in establishments that offer health insurance coverage (to adjust for the likelihood that parents of young adults have employer group coverage), and the proportion of all enrollees in private group coverage that are in employer self-insured plans (to adjust for the extent to which self-insured plans are subject to the ACA, but not state laws).

The models also include state and year fixed effects (represented by summations of respective state and year variables with their associated coefficients in the regression equation above) as well as overall and state-specific linear time trends to adjust for unobserved factors that vary by time and within states over time. Finally,  $e_{ist}$  represents a stochastic error term.

### *Statistical Analysis*

All analyses employ population weights provided by the Census Bureau and adjust standard errors for the CPS complex sample design following Davern

et al. (2007). Linear probability models are fit to produce coefficients that are direct estimates of the relevant policy impacts and are easily interpreted as percentage point changes in coverage outcomes. This approach has been applied in earlier evaluations of insurance market reforms (Buchmueller and DiNardo 2002; Monheit and Steinberg Schone 2004; Levine, McKnight, and Heep 2011; Monheit et al. 2011). It also avoids complications associated with estimation and interpretation of multiple interaction terms and their standard errors in logit or probit models (Ai and Norton 2003).

## RESULTS

The unadjusted percentage of young adults in the ACA target population with non-spousal dependent coverage rose by six percentage points between 2009 and 2010 (Table 1). This nearly one-third increase is statistically significant ( $p < .01$ ) and represents a growth of 1.2 million young adults with non-spousal dependent coverage. The non-targeted control group showed virtually no growth in non-spousal dependent coverage over

Table 1: Health Insurance Status of Young Adults Targeted for Dependent Coverage under the Affordable Care Act and Older Comparison Group Members, Calendar Years 2004–2010

Population and Source of Coverage	Year						
	2004	2005	2006	2007	2008	2009	2010
Targeted young adults <sup>†</sup>							
Private, non-spouse dependent	18.7	18.9	17.9	18.0	18.5	19.1	25.1*
Private, self or spouse	37.8	37.3	38.5	38.5	36.9	31.9*	28.6*
Public	15.2	15.1	14.3	15.5	16.5	17.8	18.0
None	34.6	35.2	35.4	34.3	34.3	37.3*	34.9*
Comparison group <sup>‡</sup>							
Private, non-spouse dependent	4.1	4.2	4.1	4.0	4.3	4.4	4.8
Private, self or spouse	63.9	62.8	61.6	62.6	60.7	56.6*	55.5
Public	11.6	12.4	11.6	11.2	12.6	13.7	14.2
None	24.9	25.2	26.8	26.1	26.8	29.4*	29.9

Notes. Percentages sum to more than 100% because some individuals may have more than one type of coverage.

\*Significantly different than prior year estimate at  $p < .01$  level.

<sup>†</sup>Persons aged 19–23 years (excluding full-time students) and those aged 24 or 25 regardless of student status.

<sup>‡</sup>Persons aged 27–30 years.



this period. We also observe a significant, but smaller decline (decrease of 2.4 percentage points) in the number of uninsured young adults in the ACA target group in 2010. This decline reverses the trend between 2008 and 2009, when the number of uninsured targeted young adults increased by a significant 3.0 percentage points. The share of the non-targeted comparison group that was uninsured also increased significantly between 2008 and 2009, but remained flat in 2010. The percentage of individuals in both the targeted and comparison groups with private coverage in their own name or that of a spouse fell during the recession of 2008–2009. This rate also declined in 2010 for targeted young adults, although at a slower rate than in the prior year, whereas the corresponding rate for the comparison population remained fairly steady.

These simple tabulations do not adjust for possible shifts in the characteristics of the study population during the study period, the circumstances in which they live, or underlying economic forces. The Great Recession may have had differential impacts on the targeted young adults and the older comparison group. For example, according to the CPS, the share of targeted young adults living with their parents rose by 17.8 percent between 2005 and 2010 (from 37.1 to 43.7 percent), whereas the share of our comparison group living at home was lower but grew more sharply, by nearly a third (from 13.3 to 17.2 percent). Since the likelihood of being covered on a parent's plan is higher for those living with parents (data not shown), this shift underscores the importance of adjusting for underlying trends in analysis of ACA impact.

Table 2 compares characteristics of the ACA-eligible group to the older comparison group. All the differences in this table are statistically significant, although few are of substantial magnitude. Notably, but not surprisingly, comparison group members are more likely to be married, to have completed a bachelors or advanced degree, and to have higher income as a percentage of the federal poverty level. The young adults in the ACA target population, on the other hand, are more likely to live with a parent and to be eligible for dependent coverage under a state law than their older counterparts.

### *Multivariate Findings*

Like the descriptive findings, our multivariate regression models show a large and statistically significant impact of the ACA dependent coverage reform. Difference-in-differences estimates from the three sets of models are shown in

Table 2: Population Characteristics of Young Adults Targeted for Dependent Coverage under the Affordable Care Act and Older Comparison Group Members, 2004–2010

<i>Characteristics*</i>	<i>Percentage (Except Where Noted) (Standard Errors Shown in Parentheses)</i>	
	<i>ACA-Targeted Young Adults<sup>†</sup></i>	<i>Comparison Group<sup>‡</sup></i>
Age (mean)	22.6 (0.008)	28.5 (0.005)
Female	48.0 (0.19)	50.0 (0.20)
Race/ethnicity		
White non-Hispanic	58.7 (0.23)	59.7 (0.24)
Hispanic	21.1 (0.18)	20.3 (0.19)
Black non-Hispanic	14.7 (0.17)	13.1 (0.17)
Other non-Hispanic	5.5 (0.10)	7.0 (0.12)
Marital status		
Married	20.5 (0.19)	48.0 (0.25)
Widowed	0.1 (0.02)	0.3 (0.02)
Divorced	1.6 (0.05)	5.0 (0.10)
Separated	1.6 (0.05)	2.6 (0.07)
Never married	76.1 (0.20)	44.1 (0.25)
Education		
Less than high school	15.9 (0.16)	12.3 (0.16)
High school or equivalent	37.7 (0.21)	28.5 (0.21)
Some college	30.4 (0.20)	27.9 (0.21)
Bachelors degree	14.5 (0.17)	22.9 (0.20)
Advanced degree	1.5 (0.05)	8.4 (0.14)
Income as a percentage of the federal poverty level		
<100% FPL	20.4 (0.19)	14.1 (0.16)
100–199% FPL	22.2 (0.19)	18.8 (0.19)
200–349% FPL	26.3 (0.20)	26.2 (0.21)
≥ 350% FPL	31.1 (0.22)	40.9 (0.25)
Student status		
Not a student	69.6 (0.20)	–
Part-time student	3.1 (0.07)	–
Full-time student	6.9 (0.11)	–
Unknown <sup>§</sup>	20.5 (0.17)	100 (0.00)
Living situation		
Not living with a parent	60.1 (0.23)	84.4 (0.18)
Living with a parent	39.9 (0.23)	15.6 (0.18)
Health status		
Excellent	38.2 (0.23)	36.4 (0.24)
Very good	34.0 (0.22)	35.2 (0.23)
Good	22.7 (0.19)	22.5 (0.20)
Fair or poor	5.1 (0.10)	5.9 (0.11)
Eligibility under state dependent coverage reform law <sup>¶</sup>		
Eligible	19.5 (0.18)	3.2 (0.10)

\*All differences significant at  $p < .0001$  two-tailed t-test or chi-square test (except student status).

<sup>†</sup>Persons aged 19–23 years and not full-time students and persons 24 or 25 regardless of student status.

<sup>‡</sup>Persons aged 27–30 years.

<sup>§</sup>CPS only collects information on student status for persons ages 16 through 24.

<sup>¶</sup>Based on young adult qualifying characteristics and year of state law implementation. ACA, 2010 Patient Protection and Affordable Care Act; FPL, federal poverty level.

Table 3 (detailed results of the models are provided in the Appendix). Percentage point changes in the first column of results in the table (Model 1) represent the overall change in young adult coverage in 2010. Although eligibility for state reforms are controlled for in Model 1, this model does not distinguish the effect of the ACA from possible contributions of prior state laws for young adults eligible for both. This model shows a statistically significant 5.3 percentage point increase in non-spousal dependent coverage accompanied by a significant 3.5 percentage point decline in the uninsured rate among young adults eligible for expanded dependent coverage under the ACA. In this specification, we also find a statistically significant decline of 2.1 percentage points in own-name or spousal coverage among targeted young adults. This decline may indicate that some individuals substituted dependent coverage for other forms of private insurance, although the decline in the share of the population of uninsured indicates that many of those gaining dependent coverage did not switch from other sources.<sup>2</sup>

The second and third columns of results in Table 3 provide DD estimates from models with full sets of interactions between state and federal reforms, allowing us to separate federal and state policy effects (Model 2). The DD estimators in the second column measure changes in coverage in the population of young adults targeted for dependent coverage under both the ACA and prior state reforms (i.e., the sum of coefficients described above), and estimates in the third column show the impact of the ACA on the population targeted by the federal expansion alone. The estimate of growth in non-spousal dependent coverage for the latter group (4.5 percentage points) is consistent with, but lower than, the estimate from Model 1 that does not include state and federal policy interactions (5.3 percentage points). The estimates of impact on the uninsured rate in these two models differ little (declines of 3.8 and 3.5 percentage points, respectively), both showing that the policy is linked to a significant drop in uninsured young adults. The estimate of private coverage crowd-out among those targeted for dependent coverage under the ACA, but not state reforms, shown in the third column (2.0 percentage points) is about the same as the estimate in Model 1 (2.1 percentage points), but it does

Table 3: Multivariate Regression Difference-in-Differences Estimates of the Impact of the Affordable Care Act Dependent Coverage Eligibility Expansion

Source of Coverage	Percentage Point Change in Source of Insurance Status (Standard Error in Parentheses)			
	Model 1	Model 2		Model 3
	Full ACA Target Population <sup>†</sup>	Targeted under ACA and Prior State Reforms <sup>‡</sup>	Targeted under the ACA But Not State Reforms	Non-Reform States Only
Private-non-spouse dependent <sup>‡</sup>	5.3** (0.6)	8.7** (2.5)	4.5** (0.9)	4.3** (0.9)
Private-self or spouse	-2.1* (0.7)	1.2 (3.3)	-2.0 (1.1)	-1.9 (1.2)
Public	0.6 (0.6)	-0.6 (2.6)	0.5 (1.0)	0.7 (1.1)
None	-3.5** (0.8)	-8.3* (3.6)	-3.8* (1.2)	-3.6* (1.3)

\* $p < .05$ , \*\* $p < .001$  for two-tailed test.  
<sup>†</sup>Models control for eligibility for prior state reforms but do not include interactions of state and federal policy effects.  
<sup>‡</sup>Other than on the plan of a spouse.  
<sup>§</sup>See Appendix for details on the calculation of standard errors.  
 ACA, 2010 Patient Protection and Affordable Care Act.

not reach statistical significance. Our estimate of private insurance crowd-out in the population targeted by both expanded dependent coverage under the ACA and prior state reforms shown in the second column (1.2 percentage points) is also not statistically significant. None of the models find crowd-out of public coverage.

The impact of the ACA on young adults who were also targeted under prior state reforms is shown in the second column of Table 3 (8.7 percentage points) and appears to be about twice as great as the estimated impact in the population eligible under only the ACA in column three (4.5 percentage points). Although the magnitude of estimates of the incremental impact on dependent coverage and the likelihood of being uninsured for those targeted under both federal and state reforms is large, the difference between these estimates shown in the second and third columns under Model 2 does not reach conventional levels of statistical significance ( $p = .068$  and  $p = .173$ , respectively).

*Sensitivity Analysis*

Results of the final set of models presented in Table 3 (Model 3) are limited to residents of states that did not enact dependent coverage expansions. The DD

coefficients from these models, and their levels of statistical significance, are nearly identical to those estimated for the state-ineligible population in Model 2 shown in the third column. This sensitivity test confirms that the ACA increased dependent coverage and reduced the number of uninsured among targeted young adults apart from any potentially confounding state expansion effects.

To test whether our models are sensitive to inclusion of student variables, we examined an alternative specification of Model 1 that excluded these variables and another that included full-time students aged 19–23 years in the target population. In both cases, our findings of policy impact did not change. We did find a somewhat smaller, but still statistically significant, increase in non-spousal dependent coverage in the model including full-time students, although this was expected as this group is unaffected by the policy change. We also tested the robustness of our model by conducting a “placebo” regression without 2010 data and assuming that the ACA was implemented in 2009. If our finding of policy impact was an artifact of our model specification, this model would likely show a false significant policy impact. It did not, reinforcing our confidence in the validity of our model specification. Sensitivity analysis results are shown in the Appendix.

## DISCUSSION

Our analysis shows that the ACA-dependent coverage expansion led to a rapid and substantial increase in the share of young adults with dependent coverage and a reduction in their uninsured rate in the early months of implementation. Although the requirement to offer coverage to young adults was effective with the first plan renewal starting in late September 2010, favorable tax treatment of premiums was extended to young adults aged up to 26 years starting in March, encouraging early adoption. In fact, some employers and insurers were reported to have begun enrollment of dependents shortly after ACA enactment in March 2010 (USDOL, EBSA n.d.). In models controlling for prior state expansions, but without interactions between state and federal reforms (Model 1), we attribute to the ACA-dependent coverage rules a more than 25 percent rise in the share of targeted young adults with non-spousal dependent coverage (a 5.3 percentage point increase) and a nearly 10 percent drop in their uninsured rate (a 3.5 percentage point decline) between 2009 and 2010. This decline in the uninsured translates to about 716,000 young adults gaining coverage as a result of the ACA in 2010.

Our findings indicate that response to the ACA-dependent coverage rule change was very rapid following its implementation date of September 23, 2010. Rapid enrollment may have been encouraged by high public awareness of the ACA dependent coverage rules. As early as April 2010, fully 70 percent of the public reported knowing about these rules (Kaiser Family Foundation (KFF) 2010). The weak economy may also have spurred dependent coverage take-up by disproportionately limiting young adults' access to coverage through their own jobs.

In contrast to studies of earlier state young adult reforms (Levine, McKnight, and Heep 2011; Monheit et al. 2011), our results do not suggest that the increase in coverage of young adults as dependents occurred at the cost of a decline in other forms of private coverage. If prior state laws had effectively led to more young adults in dependent coverage, then we would have expected a more modest policy impact of the ACA on that group in 2010. To the contrary, findings from our models including interactions between federal and prior state reforms suggest (without achieving conventional levels of statistical significance) that take-up of dependent coverage in 2010 may have been greater among those who were targeted by a state expansion. It may be that the state reforms "primed the pump" for rapid take-up under the federal rules. We note that our measure of eligibility for state reforms does not account for parental coverage status and thus overstates actual young adult eligibility. Nevertheless, the state laws may have raised awareness of the possibility of dependent coverage even among young adults ineligible under restrictive state laws. This possibility is corroborated by reports of state regulators hearing frequently from frustrated consumers who were ineligible for state expansions due to employer self-insurance or other eligibility limitations prior to the ACA (Cantor et al. 2012). If the "priming" hypothesis is correct, take-up among ACA-targeted young adults who were not eligible under prior state laws will likely grow substantially over time.

Information available in the CPS places some limitations on our analysis. We were not able to directly observe the timing of insurance changes because the CPS employs an annual reference period for coverage questions. Moreover, CPS respondents are asked about coverage in March following each calendar year reference period, making its recall period as long as 15 months, raising the possibility of recall bias. Analysts have suggested that some respondents may report coverage status after the close of the reporting year (i.e., between January and March) (Pascale 2007). If this occurred, we may have overstated the impact of the dependent coverage

reform in 2010, especially if the high salience of the new ACA rules led to reporting differences between eligible young adults and comparison group members.

The CPS also does not provide information about parents' insurance coverage or other characteristics except when young adults live with their parents, so we could not systematically adjust for the availability of parental coverage. We compensate for this gap by controlling at the state level for the rate of employer-sponsored coverage and employer self-insurance. Moreover, our models adjust for unmeasured differences among states and over time by including state and time fixed effects and controls for state-specific time trends.

## CONCLUSIONS

We find that the ACA-dependent coverage rules led to a rapid and large reduction in the number of uninsured young adults. Thus, coverage of young adults on parents' health plans is likely to be an important feature of the health insurance landscape well into the future. The benefits of this new reality to young adults and their families are clear, but this trend is not without costs. In particular, family premiums will increase as more young adults are enrolled. Furthermore, in 2014, when the ACA individual coverage mandate takes effect and the limited anti-crowd-out provisions in the ACA will end, the availability of dependent coverage may attract comparatively healthy young adults, leaving non-group plans with higher average risk and premiums. Such a shift may also increase the cost of health insurance tax credits available through health benefit exchanges. In addition, businesses that employ primarily young adults may become less likely to offer coverage as fewer young workers seek their own health benefits. Still, the ACA young adult-dependent coverage expansion represents a rare public policy success in the effort to cover the uninsured.

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## NOTES

1. We treat 30 states as having implemented reforms for the purpose of this analysis. We exclude several states listed by the National Conference of State Legislatures (National Conference of State Legislatures (NCSL) 2010) as having dependent coverage legislation (Georgia, Nevada, Oregon, Tennessee, and Wyoming) because these reforms either established dependent age thresholds at conventional levels (e.g., age 23 years for full-time students) or are limited to dependents with work-related disabilities. We also exclude Nebraska because its 2010 expansion was limited to children “aging out” of standard dependent coverage; thus, few would be eligible during our study period and we could not precisely determine their eligibility.
2. The CPS asks about coverage for the entire prior calendar year; thus, if properly answered, the negative coefficient on own-name and spousal coverage following ACA implementation should not be interpreted as indicating substitution of dependent for other sources of coverage. However, as discussed, many analysts believe that respondents may not accurately recall coverage over the course of the full year. If this is the case, the negative coefficient on non-dependent private coverage may indicate partial substitution.

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## SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.

Table S1: Linear Probability Estimates of Young Adult Health Insurance Status.

Table S2: Multivariate Regression Difference-in-Differences Estimates for Sensitivity Analyses of the Impact of the Affordable Care Act Dependent Coverage Eligibility Expansion.

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