# The Impact of the ACA's Extension of Coverage to Dependents on Young Adults' Access to Care

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September 13, 2013

#### Abstract

We examine the impact of the ACA's extension of coverage to dependents on that population's uninsured rates and their access to care –as captured by their likelihood of delaying needed medical care or prescription medicines owing to their inability to afford them. Similarly, we explore how the federal mandate might have affected their ER use. Using micro-level data from the 2002 through 2011 waves of the National Health Interview Survey, we find that the federal mandates not only lowered the uninsured rates of young adults, but also facilitated their access to prescribed medicines they were unable to afford before. While the former effect took place across the board in all states, the federal mandate's impact on young adults' access to prescribed medicines has been concentrated in states with prior state-level mandates, possibly due to their experience in implementing and publicizing prior state-level mandates.

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## I. Introduction

The Patient Protection and Affordable Care Act (ACA) signed into law by the President on March 23, 2010 is expected to extend coverage to thirty-two million Americans by 2018 (Williams *et al.* 2010). One group of beneficiaries is young adults ages 19-25. Until recently, health plans could remove enrolled children usually at age 19, sometimes older for full-time students, depending on the state (Monheit *et al.* 2011, Levine *et al.* 2011). As a result, young adults have traditionally been the ones who are more likely to lack health insurance. For example, 28.6 percent of young adults ages 18-24 lacked coverage in 2008 relative to less than a tenth of children under age 18 (DeNavas-Walt, Proctor and Smith 2009, Gius 2010). As noted by Merluzzi and Nairn (1999), lack of insurance has important consequences for access to health care, preventive care and, consequently, the future health of this population.<sup>1</sup>

Antwi *et al.* (2012) and Depew (2012) examine the impact of the new federal mandate in expanding coverage to young adults and find that the rate of young adults with health insurance rises through the extended dependent coverage. Yet, despite the importance of health insurance in accessing care (Nicholson *et al.* 2009) and the fact that young adults are three to four times more likely to forgo needed care due to costs than their insured peers (Callahan and Cooper 2005, Nicholson *et al.* 2009), we still lack an understanding of how this new federal mandate is impacting the access to needed care and prescription medicines by this population. Additionally, even though up to 26 percent of 18 and 19 years old respondents reported receiving emergency department care in the last 12 months between 2005 and 2007 (Anderson *et al.* 2010), we still do not know if increased health insurance rates are helping to lower young adults' usage of emergency care –perhaps the most expensive form of medical assistance. In this paper, we address that gap in the literature by

<sup>&</sup>lt;sup>1</sup> For instance, Merluzzi and Nairn (1999) argue that the lack of coverage is likely to compromise their future health by raising the rate of untreated obesity, tobacco, alcohol and other problems.

addressing the following questions: Is the ACA's expansion of dependent coverage reducing the share of young adults forgoing needed medical care or prescription medicines due to their cost? And, related to that point, is it reducing their usage of emergency care?

To answer the aforementioned questions, we combine micro-level data from the 2002 through 2011 Household, Person, Family and Sample Adult Files of the National Health Interview Survey (NHIS), and state-level data on the implementation of adult dependent coverage expansions from the National Conference of State Legislatures (NCSL). We then examine separately for two different types of states –namely states that had allowed for adult coverage expansions prior to ACA and states that did not, changes in the access to needed care, prescription medicines and emergency room (ER) use of age-eligible relative to that of non-age eligible young adults before and after the ACA. As the literature examining the impact of the new federal mandate on health care insurance coverage rates (Antwi *et al.* 2012, Depew 2012), we compare age-eligible young adults (those 19 to 25 years of age) to young adults 26 to 29 years of age; although in subsequent falsification tests, we assess the robustness of our findings to the choice of alternative age groups.

Overall, the analysis is timely and provides a new look into how the ACA's expansion of dependent coverage might have impacted the share of young adults forgoing needed medical care or prescription medicines due to their cost, as well as their usage of emergency care. Although previous researchers have looked at how *state* and, more recently, the *federal* mandate expanding dependent coverage have affected the health insurance status of young adults (Gius 2010, Monheit *et al.* 2011, Levine *et al.* 2011, Antwi *et al.* 2012, Depew 2012), no study has yet examined the impact of the new federal mandate on young adults' access to needed medical care or prescriptions, or on their rates of usage of ER. These are all important issues since they inform about the effectiveness of the ACA in facilitating the access to needed medical care by young adults as it is being implemented.

#### II. State and Federal Expansions of Dependent Health Care Coverage

Due to unstable employment patterns, frequent job changes and part-time work, young adults have traditionally exhibited low health insurance rates (Levy 2007). Since January 1995, a number of states started to expand coverage to young adults (see Table 1). The first state was Utah in 1995, followed by New Mexico in 2003. By June 2010, a total of 37 states had extended dependent coverage to young adults. Nevertheless, there was substantial variability in the eligibility requirements. While the vast majority (a total of 30 states) did not require young adults to be students, most of them required them to be unmarried and financially dependent on their parents (NCLS 2010). Levine *et al.* (2011) and Monheit *et al.* (2011) exploit this variability in the extension of the age up until when young adults can remain on their parents' health insurance plan across states and time to examine the impact of *state-level* mandates on the health insurance status of young adults between 2000 and 2008-2009. The authors conclude that state policies had a small to no impact on young adult uninsured rates. They also hypothesize that the result may be due to a reduction of young adult coverage through employer-sponsored insurance (ESI) or public insurance.

#### [TABLE 1]

After September 23, 2010, one of the provisions in the ACA required health plans to cover children up to age 26, regardless of their marital status, residency with parents, student or financial dependency. The provision applies to all health insurance plans created after the enactment of the law on March 23, 2010. With all other pre-existing plans, young adults qualify for dependent coverage if they are not eligible for employer-based health insurance coverage themselves up until 2014, when even this exception disappears. Antwi *et al.* (2012) and Depew (2012) examine the impact of the *federal* mandate in expanding coverage to young adults, as well as on their labor supply patterns. Their analysis is of interest since the ACA's dependent coverage provision supersedes the Employee Retirement Income Security

Act's preemption of large, self-insured firms from state-level dependent coverage expansions.<sup>2</sup> Therefore, the drop in ESI among young adults hypothetically responsible for the apparent lack of impact of state-level mandates on young adult uninsured rates might not be observed in the case of the federal mandate. Still, while both Antwi *et al.* (2012) and Depew (2012) find that the rate of young adults with health insurance rises through the extended dependent coverage, Antwi *et al.* (2012) note that, just as with the state-level mandates, the share with individually purchased insurance or ESI decreases.

Yet, we still lack an understanding of how the new federal mandate is impacting access to needed medical care and prescription medicines by young adults. Related to this point, we also do not know how it may be impacting their emergency care use. Learning about the latter is of interest given the higher rate of emergency care usage by young adults relative to middle-age adults (Anderson *et al.* 2010), and the evidence on the uninsured being more likely to seek care in the emergency department than the insured (Kwack *et al.* 2004). The latter is problematic not only due to emergency care being a costly form of care, but also because it may contribute to emergency room crowding by patients potentially not needing emergency care (Abelson 2008, Newton *et al.* 2008). Anderson *et al.* (2010) explore how the lack of health insurance due to the aging out for their parents' insurance impacts the number of visits to emergency departments and inpatient hospital admissions of young adults.<sup>3</sup> However, they do not assess the specific impact of the ACA's provision. We do so with an analysis of how the new federal mandate is impacting young adults' access to needed medical assistance, prescription medicines, or their usage of emergency department care.

 $<sup>^2</sup>$  As noted by Monheit *et al.* (2010), state laws did not apply to large, self-funded employer benefit programs due to their exemption from state regulations under a provision of the 1974 Employee Retirement Income Security Act (ERISA). Such an exemption may have likely limited the reach of the state-level mandates because many large employers offer self-funded health benefits. According to the authors, data from the Medical Expenditures Panel Survey for 2009 reveal that 56.1% of private sector workers enrolled in an ESI were in a self-insured plan. That figure reached 82.9% in establishments of more than 1,000 workers.

<sup>&</sup>lt;sup>3</sup> Other researchers examine how Medicaid expansions impacted inpatient hospitalizations (Dafny and Gruber 2005) or how Medicare affects health care consumption (*e.g.* Card *et al.* 2008, 2009). However, as noted by Anderson *et al.* (2010), most of the individuals affected by such programs were not previously uninsured and a very small share of them is young adults.

#### III. Methodology

Our primary aim is to evaluate the impact of the ACA's expanded dependent coverage on access to needed care, prescription medicines and emergency care of young adults. To address that purpose, we estimate the following difference-in-difference (DD) model using young adults ages 19-29:

(1) 
$$Y_{ist} = \alpha + \beta_1 Post_t + \beta_2 TG_i + \beta_3 Post_t * TG_i + X_{ist}\gamma + Z_{st}\rho + \delta_s + \phi_t + \delta_s t + TG_i t + \varepsilon_{ist}$$

where  $\mathcal{E}_{ist} \sim N(\mu, \sigma^2)$ , *i*=1...n individuals, *s*=state, and *t*=year. *Y*<sub>ist</sub> indicates whether individual *i* in state *s* has delayed the needed care or prescription medicines at time *t* and, in alternative specifications, the number of times the emergency room was used in the past year. Additionally, with the purpose of assessing our model, we look at the impact of the ACA's expanded dependent coverage on the likelihood of being uninsured of young adults -a topic previously examined by the literature. In that manner, we are able to compare our findings to those of previous studies and, thus, partially assess the reliability of our modeling.  $Post_t$  is an indicator equal to 1 for observations collected after October 2010 and 0 otherwise. In the latter group, we thus have individuals interviewed in February-March 2011.  $TG_i$  is a dummy variable equal to 1 for eligible youth under the ACA's expanded dependent coverage (i.e. 19 to 25 years of age). At this point, it is worth noting that some of these young adults might have already been insured through their parents and enjoyed access to care if they resided in states that allowed for expanded dependent coverage and fulfilled the individual state's requirements. As such, we are overstating the size of the treated group.<sup>4</sup> Note, however, that to the extent that some of the young adults in our treated group might have already enjoyed health care coverage through their parents, they might not have experienced much of a

<sup>&</sup>lt;sup>4</sup> In theory, we could identify which youth were, at a prior point in time, eligible for expanded coverage under a state-level mandate if we had information on their full-time student status and on whether they were financially dependent on their parents. Unfortunately, we lack data on such details which, unlike age, would also be endogenous to the outcome being examined.

change in their access to care after the introduction of the ACA's mandate, thus underestimating the true impact of the federal mandate on access to care.

The vector  $X_{ist}$  includes a variety of individual level characteristics known to influence health care access, such as age, gender, race, ethnicity, foreign-born status, marital status, household head status, family size, educational attainment, work experience, family's income to poverty ratio and, whether the young adult need help or have any disability. Likewise, the vector  $Z_{st}$  includes a variety of state-level controls capturing the state's economic, demographic, political and regulatory environment, such as the state's unemployment rate, its share of young adults, its share of college graduates and whether the state has a democratic governor and legislature. Perhaps most importantly, the vector  $Z_{st}$ includes information for whether the state in question had adult coverage expansions in place prior to the ACA. Specifically, we control for the time passed since the enactment of such adult coverage expansions, when present, as well as that term squared. Finally, equation (1) also includes a battery of state fixed-effects, time fixed-effects, and state-level time trends intended to capture idiosyncratic state-level characteristics, economy-wide shocks and timevarying economic conditions at the state level.

For simplicity, we estimate equation (1) as a linear regression model. Linear probability models estimated for the first three outcomes –namely being uninsured, delaying needed medical care in the past 12 months, and delaying prescribed medicines during the past 12 months, could yield predicted probabilities that fall outside the unit circle; however, they impose fewer restrictions on the distribution of the error term and facilitate convergence (Wooldridge 2008). Additionally, although the preferred specification for modeling that dependent variable would be an ordered probit given that emergency room visits are measured in an ordinal scale, the estimates from both models are qualitatively similar (Ferrer-i-Carbonell and Frijters 2004). We cluster standard errors at the state level and perform a

variety of robustness checks, some of which include falsification tests altering the timing of the policy at hand as well as the targeted group by the policy to check for the existence of pre-trends possibly driving our findings.

# IV. Data and Descriptive Statistics

For the purpose of our analysis, we combine micro-level data from the 2002 through 2011 Household, Person, Family and Sample Adult Files of the National Health Interview Survey (NHIS), with state-level data on the implementation of adult dependent coverage expansions from the National Conference of State Legislatures (NCSL).<sup>5</sup> The state-level data allow us to distinguish between states that had implemented some kind of adult coverage expansion before ACA and states that had not –this information is crucial in identifying the impact of ACA from that of previous state-level mandates. Additionally, we include a variety of time-varying state-level characteristics possibly correlated to young adults' access to care, prescription medicines and emergency room use. The latter include data on the states' population, shares of young adults and shares of college graduates from the Census Bureau, as well as data on the political party affiliation of the states' governors from a couple of online sources.<sup>6</sup>

To achieve our primary aim of evaluating the impact of the ACA's expanded dependent coverage on access to needed care and emergency care of young adults, we work with a sample including young adults ages 19-29. Table 2 displays some key characteristics of our sample by age eligibility pre- vs. post-ACA. Perhaps the main differences between 19-25 and 26-29 year-olds –our treatment and control groups– refer to the higher propensity of the latter group to be married, have children and be household heads. Additionally, older youth display, on average, about a half more year of education and roughly 1.3 more years of

<sup>&</sup>lt;sup>5</sup> http://www.ncsl.org/issues-research/health/dependent-health-coverage-state-implementation.aspx

<sup>&</sup>lt;sup>6</sup> *I.e.* uselectionatas.org and politico.com.

work experience than their younger counterparts. Therefore, we control for these characteristics in the regression analysis.

## [TABLE 2]

## V. On the Various Impacts of the ACA's Young Dependent Coverage

#### A) Main Findings

We next proceed to the estimation of equation (1) for the various outcomes object of analysis. Table 3 displays the results from this exercise. We estimate various model specifications in which we progressively add more controls. Our baseline specification only includes the key regressors being shown, along with a constant term. We then add a variety of individual level characteristics known to impact the outcomes object of study, such as age, gender, race, ethnicity, foreign-born status, marital status, household head status, family size, educational attainment, work experience, family's income to poverty ratio and, whether the young adult need help or have any disability. Subsequently, specification (3) adds information on time-varying state-level characteristics potentially correlated to the outcomes object of analysis, including the state's share of 19-29 year-olds, share of college-educated population, unemployment rate and its political affiliation. Importantly, we control for whether the respondent resides in a state that had expanded the insurance coverage to young adults prior to the ACA. Two variables -one indicative of the time passed since the enactment of such an expansion, as well as its squared term, are included. Finally, the last column reflects the difference-in-difference estimates after adding to the list of prior controls state fixed-effects, year fixed-effects, state-specific and treatment group-specific time trends. State-specific time trends are particularly important to account for diverging pre-trends in the states object of analysis not addressed with the inclusion of time-varying state-level characteristics and, yet, potentially responsible for differences in the outcomes being examined. Likewise, the treatment group-specific time trend addresses a key assumption of the DD analysis –namely the requirement of similar pre-treatment trends in treated and control groups. That assumption is violated if differences between eligible and non-eligible individuals are driving the enactment of the policy. To address that concern, in addition to state-specific time trends, we include a trend interacted with the treatment group dummy to capture any diverging trends between eligible and non-eligible individuals.

#### [TABLE 3]

The results in Table 3 confirm previous findings in the literature. For instance, according to the figures in the last column of Table 3 (our most complete specification), young adults 19-25 are, indeed, more likely than older youth to be uninsured by approximately 4.9 percentage points. They are also 3.6 percentage points more likely to delay needed medical care and 4.7 percentage points more likely to not be able to afford prescribed medicines than their older counterparts. Of greater interest to us are the difference-in-difference estimates of the impact of ACA on the examined insurance and health care access outcomes. According to the figures in the last column of Table 3, the ACA has lead to a statistically significant 7.7 percentage-point reduction in the share of uninsured young adults. Our results are comparable to those reported by Antwi et al. (2012) and Depew (2012), who report reductions in the share of uninsured young adults in the order of 9.5 to 12 percent. Furthermore, it has lowered the share of individuals that report not being able to afford prescribed medicines by 3.5 percentage points. However, it does not appear to have had a significant impact on their access to needed medical care or on their ER/ED visits over the past 12 months. In sum, the estimates in Table 3 are suggestive of the effectiveness of the ACA, as early as one year after its implementation, in increasing insurance rates among the young and in facilitating their acquisition of prescribed medicines.

#### **B)** Robustness Checks

#### *i. Heterogeneous Impacts by the Existence and Duration of a Prior State-level Mandate*

Although the estimates in Table 3 already take into account the time length, if applicable, during which prior adult coverage expansions might have been in place in the state, such legislative efforts might have had spillover effects, possibly providing the infrastructure for a quicker and more organized implementation of the broader adult coverage expansion regulated in the ACA. If so, we should observe a differential impact of the new federal legislation across the two groups of states. As we did when examining all states, we first look for differences in the age-eligible and non-eligible youth groups pre- vs. post-ACA in the two groups of states –namely states with prior adult insurance coverage expansions and states without. As shown in Table 4, there are no significant differences across the ageeligible youth in the two groups of states. Something similar can be said with regards to the older youth. Nevertheless, there are some general state-level differences, such as a slightly lower share of college-educated individuals and a marginally higher unemployment rate in states without prior adult insurance coverage expansions relative to the rest. Therefore, we re-estimate equation (1) -this time distinguishing according to whether or not the state had expanded insurance coverage to adult youth prior to the ACA, while still controlling for the time that prior adult coverage expansions might have been in place when applicable.

## [TABLE 4]

According to the figures in the most complete specifications (columns 4 and 8) in Table 5, the observed reductions in the share of uninsured youth and in the share young adults delaying the purchase of prescribed medicines are greater in states that had expanded adult youth coverage prior to the ACA. The share of young adults ages 19-25 without insurance coverage in those states has dropped by 8.1 percentage points pre- vs. post-ACA, and by 6.4 percentage-points in other states.<sup>7</sup> Additionally, young adults ages 19-25 in states with prior adult coverage expansions became 4.6 percentage points less likely to forgo prescribed medicines owing to their cost pre- vs. post-ACA, while we find no significant change for youth residing in other states.<sup>8</sup> In sum, the federal mandate seems to have lowered young adults' uninsured rates across all types of states; even though its impact on that group's access to prescribed medicines appears to have been geographically restricted to states that had previously allowed for adult youth coverage expansions. As noted earlier, this might be due to the ability to more quickly implement any broader federal mandated coverage expansions once they have gone through that process before.

# [TABLE 5]

Alternatively, one might argue that the uncovered impacts in Table 5 are simply capturing the impact of prior state-level adult youth coverage expansions as opposed to that of the federal ACA. After all, its impact on young adults' access to prescribed medicines is null in states without prior alike provisions. To separate any "added" effect of the federal ACA from that of previous state-level mandates in states adopting such young adult coverage expansions in the past, we re-estimate equation (2) for the two outcomes for which ACA appears to have had a significant impact. Specifically, we do so for states with prior young adult expansions and add interaction terms between the time passed since the enactment of the state-level mandate (and its squared term) and the ACA's age-eligible or treatment group as follows:

(2) 
$$Y_{ist} = \alpha + \beta_1 Post_t + \beta_2 TG_i + \beta_3 Post_t * TG_i + \beta_4 Time_{st} + \beta_5 Time_{st} * TG_i + \beta_6 Time_{st}^2 + \beta_7 Time_{st}^2 * TG_i + X_{ist}\gamma + Z_{st}\rho + \delta_s + \phi_t + \delta_s t + TG_i t + \varepsilon_{ist}$$

The coefficient  $\beta_3$  measures the *total* change in the outcome object of analysis prevs. post-ACA experienced by age-eligible youth, relative to the change experienced by their

 <sup>&</sup>lt;sup>7</sup> These two coefficients are, however, not statistically different from each other.
 <sup>8</sup> These two coefficients are statistically different from each other at a 5 percent level.

non-eligible counterparts during the same period. To the extent that our data expand up until 2011,  $\beta_3$  is capturing the change in the dependent variable among eligible youth during the last year of our sample. In contrast,  $\beta_5$  (and  $\beta_7$ ) measure the *yearly* change (and its rate of change) in the outcome object of analysis among age-eligible youth, relative to the average yearly change experienced by their non-eligible counterparts. Therefore,  $\beta_3$  and  $(\beta_5 * \overline{Time_{st}} + \beta_7 * \overline{Time_{st}}^2)$  should allow for a comparison of the change in the outcome of interest experienced by age-eligible youth *pre- vs. post-ACA*, to the change experienced *over the time period during which the state-level mandates were, on average, in place.* 

Table 6 displays the results from this exercise. Overall, it becomes clear that the reductions in the share of uninsured young adults observed pre- vs. post-ACA were not necessarily due to the enactment of previous state-level mandates. After all, the coefficients on the interaction terms between age-eligible youth and the number of years during which a state-level mandate has been in place are not distinguishable from zero. In a similar vein, although previous mandates appeared to have contributed to the reduction in the share of young adults delaying taking prescribed medicines due to their cost by as much as 4 percentage points, the ACA appears to still have had an impact in reducing the share of young adults delaying taking prescribed medicines due to their cost.

# [TABLE 6]

In sum, the results from Table 3 confirm the findings from previous studies regarding the role of the federal mandate in lowering the share of uninsured youth anywhere between 6 and 8 percentage points. Additionally, the mandate improved the access to prescribed medication by that at-risk population by 4 percentage points. And, while the figures in Table 5 reveal that some of these impacts were enjoyed by eligible youth in states with prior young adult state-level provisions, the results from Table 6 uncover the significant, despite incipient, role of the federal mandate in shaping the aforementioned outcomes even in states with prior young adult mandates.

## *ii.* Falsification Tests

In this section we perform a couple of falsification tests to further assess the validity of our findings. First, we worry about the possibility that the found impacts in Table 3 might have being the artifact of the age groups being compared. To address that concern, we carry out a falsification test that compares, instead, the impact of the new federal mandate on two groups of non-eligible young adults, such as: 26-27 and 28-29 individuals. If the results from equation (1) are not the byproduct of the reference or control group being chosen, the new DD estimate should be equal to zero. That is, indeed, the case in Panel A of Table 7, where the placebo effects are shown to be null.

Second, we explore the possibility that the policy impacts in Table 3 might be attributable to prior trends. To assess that possibility, we move forward the passage of the ACA so that, instead of starting in the fourth quarter of 2010, it was falsely in place starting in the first quarter of 2010. If the key findings in Table 3 were the byproduct of prior trends, the new DD estimate should be different from zero. However, as shown in Panel B of Table 7, the placebo effects are not statistically different from zero.<sup>9</sup>

Summarizing, the impacts reported in Table 3 do not seem to be the byproduct of the youth groups being compared or an artifact of pre-existing trends.

# [TABLE 7]

#### VII. Summary and Conclusions

In this paper, we combine micro-level data from the 2002 through 2011 waves of the National Health Interview Survey and state-level data on the implementation of adult dependent coverage expansions from the National Conference of State Legislatures to

<sup>&</sup>lt;sup>9</sup> We find similar results when we change the timing of the policy to a much earlier date, such as 2007. Results are available from the authors.

evaluate the impact that the ACA's extension of coverage to dependents might have had on that population's access to care. Specifically, we focus on the impact that the federal mandate might have had in reducing young adults' likelihood of delaying needed medical care or prescription medicines owing to their inability to afford them. Similarly, we look at how the federal mandate might have affected their ER use, if at all.

The analysis reveals that young adults appear to have benefited from the federal mandate despite its short life. Specifically, the federal mandate, which reduced their likelihood of being uninsured anywhere between 6 and 8 percentage points as pointed out by previous studies, has also improved their access to care by reducing young adults' propensity to delay their intake of prescribed medicines by approximately 4 percentage points. These effects are robust to a series of falsification tests altering the treatment group and the timing of the policy.

However, distinguishing between states that had extended insurance coverage to dependents prior to the enactment of the ACA and states that did not reveals that young adults in all states did not enjoy them equally. While the federal mandate's impact on young adults' insurance rates was rather broad, its impact on their access to prescribed medicines has been concentrated in states with prior state-level mandates. At first, these findings make us suspicious of the role played by the federal mandate as opposed to the one played by prior state-level mandates in lowering uninsured rates and in improving access to prescribed medication among young adults. Nevertheless, a closer look at that group of states reveals that the federal mandate played a significant role in shaping health insurance coverage and access to prescribed medicines by young adults in states with prior mandates.

In sum, despite its short life, the expansion of coverage to young adults mandated by the ACA appears to have, not only lowered the uninsured rates among young adults, but also facilitated their access to prescribed medicines they were unable to afford before. Possibly due to their experience in implementing and publicizing prior state-level mandates, the effects of the federal mandate have been primarily observed among young adults residing in states with prior state-level mandates. Future evaluations of the impact that the federal mandate might have on youth are called for as its implementation matures and its effect possibly strengthens.

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#### Percentage of Young Adults With Health Insurance, 2009-2011 by Quarter & Age Group

Source: CDC/NCHS, National Health Interview Survey, 2009-2011, Family Core component. Based on data prepared by Robin A. Cohen and Michael E. Martinez of the Division of Health Interview Statistics, National Center for Health Statistics, Centers for Disease Control and Prevention.

	Full Year	Eligibility Criteria					
State	<b>Implemented</b> <sup>a</sup>	Maximum Age	Student	Not Married	No Children		
Colorado	2006	24		Yes			
Connecticut	2009	25		Yes			
Delaware	2007	23		Yes	Yes		
Florida	2007	30		Yes	Yes		
Georgia	2006	24	Yes				
Idaho	2007	24	Yes	Yes			
Illinois	2004	25		Yes			
Indiana	2007	23					
Iowa	2009	24	Yes	Yes			
Kentucky	2009	24		Yes			
Louisiana	2009	23	Yes	Yes			
Maine	2007	24		Yes	Yes		
Maryland	2008	24		Yes			
Massachusetts	2007	25					
Minnesota	2008	24		Yes			
Missouri	2008	25		Yes	Yes		
Montana	2008	24		Yes			
Nevada	2005	23	Yes	Yes			
New Hampshire	2007	25		Yes			
New Jersey	2006	30		Yes	Yes		
New Mexico	2005	24		Yes			
New York	2010	29		Yes			
North Dakota	2009	25	Yes	Yes			
Ohio	2010	27	Yes	Yes			
Oregon	2009	22		Yes			
Pennsylvania	2009	29		Yes			
Rhode Island	2007	24	Yes	Yes			
South Carolina	2008	21	Yes	Yes			
South Dakota	2007	29	Yes				
Tennessee	2008	23		Yes			
Texas	2004	24		Yes			
Utah	1995	25		Yes			
Virginia	2007	24	Yes				
Washington	2007	24		Yes			
West Virginia	2007	24		Yes			
Wisconsin	2010	26		Yes			
Wyoming	2009	22	Yes	Yes			

Table1: State Dependent Coverage Laws

<sup>a</sup> Full Year Implemented is the first full calendar year the policy was implemented.

**Sources:** National Conference of State Legislatures (NCSL) 2010; Nicholson et al. 2009; Levine et al. 2011; Monheit et al. 2011, Depew 2012 and our own readings of state laws.

Panel A: Treated Group, 19-25										
By Treatment Date: Before ACA After ACA										
	Mean	SD	Mean	SD						
Δge	22 2561	0.0353	22 2834	0.0486						
Female	0 5184	0.0053	0 5220	0.0106						
White	0 7973	0.0033	0.7850	0.0079						
Black	0.1372	0.0043	0.1331	0.0077						
Hispanic	0.1289	0.0035	0.1424	0.0066						
Immigrant	0.1080	0.0029	0.1045	0.0059						
Married	0.1766	0.0025	0.1043	0.0084						
Family Size	2 2492	0.0040	2 2869	0.0479						
Household Head	0 5667	0.0254	0.5326	0.0117						
Education	14 7460	0.0033	15 0085	0.0571						
Physical Limitation	0.0470	0.0202	0.0441	0.0030						
Need Help	0.0470	0.0016	0.0441	0.0037						
Income to Poverty	7 3277	0.0000	7 1558	0.1411						
Experience	1.3277	0.0889	1 2910	0.1411						
State Depulation	1.3734	186627	12400000	220161						
Baraantaga Dagraa	27 1250	0 1007	12400000	0 1700						
Percentage Degree	12 7086	0.1097	27.7040	0.1790						
Percentage Foung	15.7080	0.0100	15.9159	0.0225						
	0.3027	0.0099	0.3303	0.0177						
Observations	0.0013	0.0004	0.0887	0.0008						
Observations	20304		5570							
	Panel B: Control Grou	1p, All Youth 26-2	9							
By Treatment Date:	Before ACA		After ACA							
	Mean	SD	Mean	SD						
Age	27.5094	0.0114	27.5301	0.0242						
Female	0.5229	0.0049	0.5042	0.0111						
White	0.7863	0.0047	0.7842	0.0094						
Black	0.1401	0.0039	0.1343	0.0079						
Hispanic	0.1501	0.0036	0.1534	0.0067						
Immigrant	0.1551	0.0037	0.1461	0.0079						
Married	0.4089	0.0058	0.3766	0.0124						
Family Size	2.5247	0.0177	2.5098	0.0370						
Household Head	0.6750	0.0047	0.6612	0.0103						
Education	15.4165	0.0361	15.6541	0.0630						
Physical Limitation	0.0455	0.0020	0.0544	0.0048						
Need Help	0.0061	0.0007	0.0111	0.0026						
Income to Poverty	9.2370	0.0466	9.1826	0.1055						
Experience	2.7088	0.0267	2.9235	0.0684						
State Population	11800000	109005	13400000	246082						
Percentage Degree	27.3679	0.0682	27.7386	0.1292						
Percentage Young	13.7403	0.0130	13.9360	0.0225						
Republican Governor	0.5147	0.0075	0.5386	0.0133						
Unemployment	0.0627	0.0003	0.0905	0.0004						
Observations	14151		2663							

 Table 2: Descriptive Statistics Before and After ACA

Koy Bogrossors	Basalina	With Personal	With State-Level	With Fixed-Effects and						
Key Kegressors	Dasenne	Controls Controls		State-Time Trends						
Panel A: Dependent Variable: Uninsured										
Post-ACA*Young Adult 19-25	-0.061***	-0.067***	-0.066***	-0.077***						
Tost Herr Toung Huut 17 25	(0.0140)	(0.0130)	(0.0130)	(0.0170)						
Post-ACA	0.0170	0.020**	0.0070	0.0030						
	(0.0100)	(0.0100)	(0.0100)	(0.0200)						
Young Adult 19-25	0.038***	0.067***	0.066***	0.049***						
6	(0.0060)	(0.0100)	(0.0100)	(0.0140)						
Observations	39789	39789	39789	39789						
R-squared	0.0020	0.1470	0.1510	0.1610						
Pa	nel B: Depend	ent Variable: Medic	al Care Delayed							
Post-ACA*Young Adult 19-25	-0.0140	-0.0140	-0.0140	-0.0060						
Tost Herr Toung Huut 17 25	(0.0140)	(0.0140)	(0.0140)	(0.0140)						
Post-ACA	0.0150	0.0120	-0.0020	-0.0020						
1050 11011	(0.0190)	(0.0090)	(0.0020)	(0.0160)						
Young Adult 19-25	-0.0040	0.030***	0.029***	0.036***						
Toung Haute 17 25	(0.0050)	(0.0080)	(0.0080)	(0.0120)						
Observations	39789	39789	39789	39789						
R-squared	0.0000	0.0440	0.0450	0.0540						
 Panel C• De	nendent Varia	ble: Could not Affor	rd Prescription Medici	nes						
		bie. Could not Ano	tu i rescription vicule							
Post-ACA*Young Adult 19-25	-0.039***	-0.042***	-0.041***	-0.035***						
	(0.0100)	(0.0100)	(0.0100)	(0.0130)						
Post-ACA	0.020**	0.017**	0.0110	0.027*						
	(0.0080)	(0.0080)	(0.0080)	(0.0150)						
Young Adult 19-25	-0.0040	0.040***	0.039***	0.047***						
	(0.0040)	(0.0070)	(0.0070)	(0.0100)						
Observations	39546	39546	39546	39546						
R-squared	0.0010	0.0490	0.0510	0.0580						
Pane	l D: Dependent	Variable: Number	of Times in ER/ED							
Post-ACA*Young Adult 19-25	0.0060	0.0080	0.0080	0.0070						
e	(0.0260)	(0.0240)	(0.0240)	(0.0320)						
Post-ACA	-0.0240	-0.0260	-0.0250	-0.0320						
	(0.0200)	(0.0190)	(0.0200)	(0.0370)						
Young Adult 19-25	0.048***	-0.0010	-0.0010	-0.0010						
-	(0.0110)	(0.0180)	(0.0170)	(0.0250)						
Observations	39509	39509	39509	39509						
R-squared	0.0010	0.0810	0.0820	0.0880						

Table .	3: R	egression	Based I	DD Es	stimates	of the	Impact	of the	ACA	on the	Follov	ving (	Outcomes

**Notes:** All regressions include a constant term, as well as age, gender, race, ethnicity, nativity, marital status, family size, experience, educational attainment, her/his family income to poverty ratio, whether the young adult has poor/fair health and whether the young adult is a household head.

Panel A: Treated Group – All Youth 19-25										
By Group of States	By Group of States: States w/o Adult Coverage States without Adult Coverage									
by Group of States.		Expansion	s Prior to ACA	A Expansions Prior to ACA						
By Date:	Pre-A	CA	Post-	ACA	Pre-A	CA	Post-A	Post-ACA		
	Mean SD Mean SD						Mean	SD		
Age	22.2394	0.0835	22.1581	0.0904	22.2630	0.0357	22.3303	0.0570		
Female	0.5180	0.0099	0.5541	0.0174	0.5186	0.0063	0.5099	0.0129		
White	0.7862	0.0098	0.7577	0.0180	0.8018	0.0050	0.7953	0.0086		
Black	0.1303	0.0089	0.1454	0.0144	0.1400	0.0047	0.1284	0.0075		
Hispanic	0.1521	0.0074	0.1963	0.0153	0.1194	0.0040	0.1222	0.0069		
Immigrant	0.1118	0.0056	0.1010	0.0089	0.1065	0.0036	0.1058	0.0073		
Married	0.1908	0.0105	0.1742	0.0183	0.1708	0.0051	0.1372	0.0092		
Family Size	2.3125	0.0543	2.4473	0.0848	2.2232	0.0287	2.2269	0.0550		
Household Head	0.5566	0.0109	0.5390	0.0188	0.5708	0.0062	0.5302	0.0144		
Education	14.6521	0.0511	14.7088	0.1036	14.7845	0.0336	15.1206	0.0671		
Physical Limitation	0.0416	0.0033	0.0502	0.0077	0.0493	0.0021	0.0418	0.0046		
Need Help	0.0047	0.0009	0.0057	0.0023	0.0055	0.0007	0.0086	0.0022		
Income to Poverty	7.1368	0.1723	7.2484	0.2199	7.4060	0.1023	7.1211	0.1780		
Experience	1.3535	0.0337	1.4183	0.0549	1.3844	0.0224	1.3671	0.0406		
State Population	13500000	543674	16900000	960531	10200000	168443	10700000	281316		
Percentage Degree	25.8218	0.1645	26.3896	0.2061	27.6610	0.1344	28.2785	0.2303		
Percentage Young	13.9197	0.0267	14.1853	0.0404	13.6220	0.0187	13.8124	0.0272		
Republican Governor	0.4854	0.0237	0.4584	0.0324	0.5098	0.0105	0.5849	0.0214		
Unemployment	0.0663	0.0011	0.0989	0.0025	0.0593	0.0004	0.0849	0.0005		
Observations	639	1	11	02	141′	71	247	2		
		Panel 1	B: Control Gro	oup – All You	th 26-29					
		States w/o	Adult Coverse	0	Stat	os without	Adult Covera	σo		

<b>Table 4: Descriptive Statistics</b>	Before and After	ACA by Ag	ge-eligibility and	by Group of States

Panel B: Control Group – All Youth 26-29										
By Group of States:	5	States w/o A	Adult Coverage	States without Adult Coverage						
F	Expansions Prior to ACA				Expansions Prior to ACA					
By Date:	Pre-A	CA	Post-A	CA	Pre-A	CA	Post-ACA			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Age	27.5297	0.0217	27.4770	0.0405	27.5015	0.0138	27.5508	0.0298		
Female	0.5265	0.0094	0.5064	0.0201	0.5214	0.0056	0.5033	0.0133		
White	0.7672	0.0095	0.7791	0.0172	0.7937	0.0053	0.7862	0.0114		
Black	0.1325	0.0072	0.1196	0.0156	0.1431	0.0045	0.1400	0.0092		
Hispanic	0.1838	0.0078	0.2104	0.0135	0.1370	0.0041	0.1312	0.0077		
Immigrant	0.1721	0.0070	0.1681	0.0135	0.1485	0.0045	0.1375	0.0098		
Married	0.4446	0.0104	0.3585	0.0229	0.3950	0.0067	0.3837	0.0148		
Family Size	2.6783	0.0314	2.5820	0.0647	2.4649	0.0208	2.4817	0.0447		
Household Head	0.6532	0.0091	0.6212	0.0208	0.6835	0.0056	0.6767	0.0122		
Education	15.1552	0.0681	15.5924	0.1253	15.5183	0.0427	15.6781	0.0728		
Physical Limitation	0.0521	0.0038	0.0466	0.0076	0.0430	0.0024	0.0575	0.0061		
Need Help	0.0091	0.0019	0.0091	0.0033	0.0050	0.0007	0.0119	0.0034		
Income to Poverty	9.0576	0.0861	9.0644	0.1985	9.3069	0.0567	9.2286	0.1258		
Experience	2.7088	0.0551	2.8248	0.1244	2.7089	0.0315	2.9619	0.0844		
State Population	15300000	309838	19300000	659736	10400000	106993	11200000	223355		
Percentage Degree	25.9049	0.1185	26.6397	0.1874	27.9379	0.0758	28.1661	0.1563		
Percentage Young	13.9628	0.0214	14.3105	0.0397	13.6536	0.0162	13.7903	0.0254		
Republican Governor	0.4831	0.0128	0.4109	0.0272	0.5271	0.0091	0.5882	0.0147		
Unemployment	0.0693	0.0006	0.1032	0.0009	0.0601	0.0003	0.0856	0.0004		
Observations	4230	5	823	3	9912 1840			)		

	State	es with Adult Cove	rage Expansions P	rior to ACA	State	es without Adult Coverage Expansions Prior to ACA				
w b		With With		With Fixed-Effects		With	With	With Fixed-Effects		
Key Regressors	Baseline	Personal	State-Level	and State-Time	Baseline	Personal	State-Level	and State-Time		
		Controls	Controls	Trends		Controls	Controls	Trends		
			Panel A:	: Dependent Variable: Uni	nsured					
Post-ACA*Young Adult 19-25	-0.069***	-0.075***	-0 074***	-0.081***	-0.0380	-0.043*	-0.0400	-0.064**		
Tost Herr Toung Haut 17 25	(0.00)	(0.0150)	(0.0150)	(0, 0200)	(0.0280)	(0.0250)	(0.0260)	(0.0320)		
Post-ACA	0.0120	0.0180	0.0020	-0.0130	0.0280	0.0380	0.0250	0.0430		
rost nen	(0.0120)	(0.0110)	(0.0120)	(0.0230)	(0.0200)	(0.0330)	(0.0360)	(0.0390)		
Young Adult 19-25	0.041***	0.060***	0.059***	0.048***	0.030**	0.086***	0.081***	0.050*		
roung ruun 17 20	(0.0070)	(0.0110)	(0.0110)	(0,0160)	(0.0130)	(0.0200)	(0.0180)	(0.0280)		
Observations	27704	27704	27704	27704	12085	12085	12085	12085		
R-squared	0.0020	0.1490	0.1530	0.1640	0.0010	0.1450	0.1510	0.1570		
			Panel B: Depe	endent Variable: Medical (	Care Delayed					
Post-ACA*Young Adult 19-25	-0.0140	-0.0150	-0.0150	-0.0030	-0.0140	-0.0090	-0.0090	-0.0170		
e	(0.0120)	(0.0110)	(0.0110)	(0.0160)	(0.0250)	(0.0250)	(0.0240)	(0.0300)		
Post-ACA	0.0070	0.0060	-0.0030	-0.0220	0.036**	0.055**	0.0270	0.0460		
	(0.0110)	(0.0110)	(0.0110)	(0.0200)	(0.0170)	(0.0280)	(0.0290)	(0.0300)		
Young Adult 19-25	-0.0010	0.031***	0.031***	0.046***	-0.0100	0.027*	0.025*	0.0100		
-	(0.0060)	(0.0100)	(0.0100)	(0.0140)	(0.0090)	(0.0160)	(0.0150)	(0.0230)		
Observations	27704	27704	27704	27704	12085	12085	12085	12085		
R-squared	0.0000	0.0450	0.0450	0.0550	0.0010	0.0450	0.0480	0.0540		
		Pane	l C: Dependent Va	riable: Could not Afford F	Prescription Medicine	25				
Post-ACA*Young Adult 19-25	-0.053***	-0.053***	-0.053***	-0.046***	-0.0040	-0.0100	-0.0100	-0.0040		
	(0.0120)	(0.0110)	(0.0110)	(0.0150)	(0.0190)	(0.0180)	(0.0180)	(0.0250)		
Post-ACA	0.021**	0.019**	0.0130	0.0210	0.0160	0.066**	0.059**	0.0430		
	(0.0090)	(0.0090)	(0.0100)	(0.0180)	(0.0150)	(0.0270)	(0.0270)	(0.0300)		
Young Adult 19-25	-0.0030	0.035***	0.035***	0.043***	-0.0050	0.051***	0.049***	0.057**		
	(0.0050)	(0.0080)	(0.0080)	(0.0110)	(0.0080)	(0.0150)	(0.0150)	(0.0220)		
Observations	27508	27508	27508	27508	12038	12038	12038	12038		
R-squared	0.0010	0.0520	0.0540	0.0610	0.0000	0.0460	0.0500	0.0560		
Panel D: Dependent Variable: Number of Times in ER/ED										
Post-ACA*Young Adult 19-25	-0.0200	-0.0010	0.0010	0.0130	0.0710	0.0270	0.0260	-0.0110		
Tost Herr Toung Haut 17 25	(0.0280)	(0.0270)	(0.0270)	(0.0370)	(0.0570)	(0.0510)	(0.0510)	(0.0670)		
$Post_{\Delta} C \Delta$	-0.0210	-0.0300	(0.0270)	-0.0480	-0.0300	-0.0090	-0.0340	0.0140		
1 000 11011	(0.0210)	(0.020)	(0.0230)	(0.0430)	(0.0390)	(0.0600)	(0.0620)	(0.0750)		
Young Adult 19-25	0.052***	0.00200	0.0080	0.0280	0.037*	-0.0220	-0.0230	-0.073*		
10ung / uunt 17 23	(0.0120)	(0.0210)	(0.0210)	(0.0300)	(0.0210)	(0.0350)	(0.0340)	(0.0420)		
Observations	27483	27483	27483	27483	12026	12026	12026	12026		
R-squared	0.0010	0.0820	0.0830	0.0900	0.0010	0.0820	0.0840	0.0900		
	0.0010	0.0020	0.0000	0.0000	0.0010	0.0020	0.0010	0.0900		

#### Table 5: Regression Based DD Estimates of the Impact of ACA for the Following Outcomes

Key Regressors	Uninsured	Delayed Medication
Post-ACA	-0.0200	0.0300
	(0.0230)	(0.0180)
Young Adult 19-25	0.052***	0.034***
	(0.0180)	(0.0130)
Post-ACA*Young Adult 19-25	-0.069***	-0.061***
5	(0.0220)	(0.0160)
Number of Years since a State Young Adult Provision	-0.0030	0.018**
C C	(0.0100)	(0.0070)
Number of Years since a State Young Adult Provision*Young Adult 19-25	0.0090	-0.016*
	(0.0130)	(0.0090)
Number of Years since a State Young Adult Provision Squared	0.0000	-0.002**
	(0.0020)	(0.0010)
Number of Years since a State Young Adult Provision Squared*Young Adult 19-25	-0.0010	0.002*
	(0.0020)	(0.0010)
Constant	-2.088***	-0.649*
	(0.7380)	(0.3430)
Observations	27704	27508
R-squared	0.1640	0.0610
-		
$\beta_3$	-0.0690	-0.0610
$\beta_5 * \overline{Time_{st}} + \beta_7 * \overline{Time_{st}^2}$	0.0000	-0.0339

## Table 6: Distinguishing between the Impact of ACA and the Effect of Prior Young Adult Provisions

Key Regressors	Uninsured	Delayed Medical Care	Delayed Medication	ER Visits				
Panel A: Falsified Treatment Group								
Post-ACA*Falsification Adult 28-29	0.0320	0.0230	0.0100	0.0090				
	(0.0280)	(0.0260)	(0.0220)	(0.0560)				
Post-ACA	-0.0370	-0.045*	0.0390	-0.0280				
	(0.0290)	(0.0250)	(0.0260)	(0.0700)				
Falsification Adult 28-29	0.0340	0.0030	-0.0080	0.0230				
	(0.0230)	(0.0220)	(0.0190)	(0.0450)				
Constant	0.9370	0.5800	-0.4630	1.5980				
	(1.0820)	(0.8430)	(0.7920)	(2.2410)				
Observations	12215	12215	12143	12130				
R-squared	0.1980	0.0760	0.0800	0.1200				
	Panel B: Falsi	fied Policy Period						
Falsified Post-ACA*Adult 19-25	0.0050	-0.0050	-0.0130	-0.0070				
	(0.0150)	(0.0140)	(0.0130)	(0.0320)				
Falsified Post-ACA	0.0140	0.0190	0.035***	0.0360				
	(0.0160)	(0.0120)	(0.0120)	(0.0310)				
Adult 19-25	0.069***	0.037***	0.054***	-0.0040				
	(0.0140)	(0.0110)	(0.0100)	(0.0240)				
Constant	-1.490***	0.1270	-0.637**	0.9610				
	(0.5380)	(0.5170)	(0.3030)	(0.8920)				
Observations	39789	39789	39546	39509				
R-squared	0.1600	0.0540	0.0580	0.0880				

Table 7: Falsification Tests

Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1