

# Insurance Take-Up Among the Near-Elderly in the Age of the Affordable Care Act

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## **Abstract**

Near-elderly individuals, those 60 to 64 years old, have high health care needs and, if uninsured, often delay costly care until they enroll in Medicare (Card et al. (2008); McWilliams et al. (2009)). The passage of the Affordable Care Act (ACA) in 2014 provided new coverage options to uninsured near-elderly individuals. Although understanding the extent to which the ACA affected the near-elderly is key to future health policy decisions, little focus has been given to the near-elderly. I provide the first assessment of the ACA's effect on near-elderly insurance coverage using three nationally representative surveys. I replicate and update the findings from Card et al. (2008), then extend the analysis by using a difference-in-regression discontinuity design to quantify the effect of the ACA on insurance rates just prior to individuals transitioning into Medicare. I find that the gap in insurance coverage rates between 64- and 65-year olds declines by almost half, from 8 to 4.5 percentage points, after the ACA went into effect in 2014. Consistent with these changes being attributable to the ACA, I also find that most coverage gains come from Medicaid in states that expanded Medicaid eligibility, while coverage gains in non-Medicaid-expansion states come from the kinds of insurance plans available on the exchanges. These results raise questions about the extent to which increasing coverage for the near-elderly may ease demand upon their entry into Medicare and the consequences of an ACA repeal on their access to health care.

# 1 Introduction

Policies aimed at expanding insurance coverage can have very different effects on different groups. For example near-elderly individuals' proximity in age to Medicare eligibility further the effects of programs that increase health insurance coverage. Those receiving generous benefits may be able to seek treatment immediately; those with less generous or no coverage have an incentive to forgo elective or preventive care until they are eligible for Medicare.

Because the near-elderly transition into near-universal health coverage at age 65, it is crucial to understand how programs intended to increase coverage prior to this transition will affect this population. If individuals are already covered, the policy to increase insurance coverage will have little effect. However, if individuals are obtaining insurance coverage prior to reaching the Medicare eligibility age, the new insurance coverage may help them gain treatment for conditions earlier, reducing the potential for sharp health care demand increases upon entering Medicare and possibly improving their health. Finally, the structure and generosity of insurance plans obtained through expansion efforts compared to Medicare generosity may determine whether newly insured individuals seek care in the near term or wait until enrolling in Medicare.

The ambiguity of effects of the Affordable Care Act (ACA) on the near-elderly population and threats to repeal the law motivate for this paper. While the ACA reduced the uninsurance rate by half among all non-elderly adults (The Henry J. Kaiser Family Foundation, 2017), we know little about the law's effect on the near-elderly. Changes in health care access and health insurance among this group are particularly important to understand, as this group consumes more medical services than their younger counterparts. Further, health care coverage of the near-elderly may impact consumption and spending once these individuals enter Medicare.

In this paper, I estimate the effect of the ACA on insurance coverage of the near-elderly transitioning into Medicare. I specifically study the short-term change in insurance rates of

near-elderly individuals before and after the implementation of the ACA. I utilize the exogenous transition into Medicare at age 65 to evaluate whether the ACA reduced the gap in continuous insurance coverage of newest Medicare beneficiaries. I use a Difference-in-Regression Discontinuity (RD-DD) research design with data from the American Community Survey (ACS), Behavioral Risk Factor Surveillance Survey (BRFSS), and National Health Interview Survey (NHIS) to estimate the change in the insurance rate at the age 65 threshold (i.e. the RD) before and after the ACA (i.e the DD).

Before 2014, insurance coverage jumps by 7.97 percentage points at age 65 (90.1% to 98%); after the ACA the difference falls by 3.4 ( $p < 0.001$ ) percentage points. Sixty percent of the insurance gains in Medicaid expansion states come from Medicaid, while 86 percent of gains in non-expansion states come from private insurance policies. Further, I find that the ACA narrowed but did not close insurance coverage disparities between races. The insurance rates both before and after the cutoff are higher for whites than blacks; for whites, insurance rates jumped from 91.4% to 98.7% at the cutoff, while insurance rates for blacks jumped from 87.7% to 96.2%. Though the point estimates are similar for non-Hispanic Whites and non-Hispanic blacks (2.99 and 2.61 percentage points, respectively), the relative effect of the ACA is larger for whites (40%) than blacks (30%). The relative effect of the ACA on other races is the largest; of the 12.9 percentage point jump in insurance coverage (from 81.3% to 94.1%) at the cutoff, two-thirds of that is due to the coverage provisions of the ACA.

Despite extending health care coverage for 20 million Americans, efforts to repeal and replace the ACA have moved forward several times in 2017. Each bill proposed would have entailed large reductions in the insurance rate; the Congressional Budget Office (CBO) estimated up to 14 million individuals would be without insurance by the end of 2018 in scoring the American Health Care Act (AHCA).<sup>1</sup> The near-elderly population, those between the ages of 55 and 64,

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<sup>1</sup>CBO scores for other bills (Graham-Cassidy and Better Care Reconciliation Act) produced similar estimates of the number of uninsured individuals resulting from ACA repeal.

who obtained insurance under the ACA were expected to be affected disproportionately by its repeal; passage of the AHCA could result in premiums increasing up to five times higher than those of younger adults, while tax credits would only be twice as large (Congressional Budget Office, 2017, p. 2). Additionally, proposed Medicaid block grants that diminish in real terms over time, where states receive lump sums to administer Medicaid, would effectively halt and eventually reverse Medicaid expansions.

The order of the paper is as follows. In the next section, I describe the institutional setup pertinent to this population and the mechanisms through which obtaining health insurance prior to age 65 would affect use patterns in Medicare. I review the sample selection and research design for this study in Section 3, and discuss results and robustness checks in Section 4. Finally, I close with policy implications and future steps in Section 5.

## 2 Institutional Setup and Literature Review

Prior to the Affordable Care Act, 81.5 percent of those aged 18 to 64 were covered by some source of health insurance compared to 87.6 percent of 60- to 64-year olds (ACS, 2016).<sup>2</sup> In 2013, 52.5% of the near-elderly population obtained coverage via employer-sponsored insurance (ESI) plans. Disabled low-income individuals and low-income adults with dependent children may have been eligible for public insurance under Medicare or Medicaid, though state-level eligibility depended on income and disability qualifications. Seventeen states offered basic health insurance plans for low-income childless adults, although plan options, eligibility, and availability were by no means universal across states.<sup>3</sup> About 3 percent of near-elderly individuals obtained health insurance through other programs sponsored by the federal government, such as TRICARE or the Indian Health Service. Finally, those who did not qualify for any of the former options could have

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<sup>2</sup>See The Henry J. Kaiser Family Foundation (2017) for the most recent statistics on non-elderly uninsurance rates.

<sup>3</sup>A full list of states providing basic health plans prior to 2014 can be found in Simon et al. (2017).

purchased individual insurance plans directly from companies; nearly 10% of the near-elderly obtained coverage this way.

For the near-elderly, whose medical use and costs are generally higher than the rest of the non-elderly population, the effects of being uninsured or underinsured are clear. Those who lack health insurance use fewer medical services, often leading to undiagnosed, untreated, or unmanaged chronic conditions (Wilper et al., 2009; McWilliams et al., 2004; Kaufman et al., 2015). These effects are more pronounced in the near-elderly, who generally have a higher prevalence of chronic conditions such as hypertension and diabetes.

Once reaching Medicare eligibility age, previously underinsured and underinsured people tend to utilize Medicare services at a higher rate than new enrollees who were previously adequately insured, particularly if they have been uninsured for a long period of time (Card et al., 2008; McWilliams et al., 2007). McWilliams et al. (2009) linked administrative claims data with the Health and Retirement Study to investigate utilization before and after individuals enroll in Medicare. The authors found previously uninsured individuals had higher hospitalization rates for lower extremity joint replacement and complications related to certain chronic conditions. Decker et al. (2012) also linked administrative data with the National Health Interview Survey (NHIS) and Health and Retirement Study (HRS) but did not find the same increases in hospitalizations. However, the authors did find previously uninsured people had more emergency department and outpatient hospital visits and fewer office-based physician visits.

Most relevant to this topic is a study by Card et al. (2008), which used the NHIS and inpatient discharge data to analyze coverage and utilization of near-elderly individuals near the Medicare eligibility threshold. Using a regression discontinuity based on the Medicare age cutoff, they found a 9.5 percentage point increase in health insurance coverage, sharp increases in use of low cost health services, and modest increases in elective surgeries. Subgroups who been uninsured or underinsured showed the largest increases in utilization, suggesting that

pre-Medicare insurance coverage affects post-Medicare consumption.

The ACA included three kinds of policies meant to increase health insurance among non-elderly individuals who previously were unable to afford it. The first effort to expand insurance coverage came via several changes to employer sponsored insurance between 2010 and 2016. In 2010, employers received funding to cover insurance for near-elderly individuals in the case of retirement prior to age 65. Between 2014 and 2016, small firms began offering insurance to their employees; employer mandates went into effect for firms with at least 50 employees (2015), then firms with at least 100 employees (2016). The government offered tax credits aimed at assisting small firms, those with less than 25 employees, obtain health insurance coverage. The credit incentives, first offered in 2010, increased in 2014 for firms purchasing insurance via the state insurance exchanges (French et al., 2010).

Second, the ACA established health insurance marketplaces, where the uninsured could purchase community-rated and potentially subsidized private health insurance plans. In states that expanded Medicaid, those obtaining insurance via the exchanges qualify for premium tax credits if their income is between 138 and 400% of the Federal Poverty Level. In states that did not expand Medicaid, premium tax credits are available for people with incomes between 100 and 400% of the federal poverty level. These two coverage options had the potential to benefit the near elderly population substantially; half the uninsured individuals between ages 60 and 64 stated high cost as a reason for lacking health insurance (NHIS, 2016).

Third, the ACA allowed states to expand Medicaid to low-income childless adults. Prior to the ACA, low-income people who were childless had few options to obtain affordable coverage. The ACA offered incentives to states to expand Medicaid eligibility and offer low- to no-cost state-run public insurance to single childless adults earning below 139% of the Federal Poverty Level (FPL).<sup>4</sup> To date, thirty-one states and the District of Columbia have implemented the

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<sup>4</sup>Initially, the federal government mandated state expansions of Medicaid. However, the Supreme Court, in *National Federation of Independent Business v. Sebelius* ruled against the mandate and granted states the option

ACA's Medicaid expansion.

Numerous studies have detailed the effects of Medicaid expansions on health insurance coverage for the low-income non-elderly population. A few, such as Sommers et al. (2014), estimated the effect of the Medicaid expansion on uninsurance rates in states that opted to expand prior to full ACA roll-out in 2014. The authors found modest (between 3.7 and 4.9 percentage point) increases in health insurance coverage in these states. Others analyzed the effects following the full Medicaid expansion rollout. Simon et al. (2017), using data from the Behavioral Risk Factor Surveillance Survey, found an increase of 5.4 percentage points in health insurance coverage after the first 2 years of the Medicaid expansion; this was between the 7.4 percentage points reported by Wherry & Miller (2016) using the National Health Interview Survey and 2.9 percentage points reported by Courtemanche et al. (2017) using American Community Survey data. Others (Barbaresco et al., 2015; Long et al., 2017; Sommers et al., 2017) reported similar estimates.

Few have given attention to the near-elderly population. At most, there is a mention of increased insurance rates among those ages 55 to 64 (Long et al., 2017). However, there is no study, to my knowledge, that evaluates coverage rates in the near-elderly population and whether these changes bring near-elderly insurance rates to parity with Medicare coverage rates. This particular population is important for a few reasons. As previously mentioned, the near-elderly are more likely to have chronic conditions and higher demand for medical care; this group gaining health insurance prior to entering age 65 may alleviate the pent-up demand that occurs after initial Medicare enrollment. The newly insured individuals may manage chronic conditions at earlier stages, potentially offsetting future costly medical procedures. The benefits of these coverage provisions may provide substantial savings for the 45% of uninsured near-elderly individuals who have been so for longer than three years (NHIS, 2016). This paper fills

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to refuse expansion. See Rosenbaum & Westmoreland (2012) for implications of this decision on Medicaid and the flexibility of enacting the ACA.

this gap by studying how the ACA affected the coverage transition to Medicare.

### 3 Data and Estimation Strategy

#### 3.1 Data

To measure the changes in insurance rates among the near-elderly and elderly, I use the 2009-2016 waves of data from three sources: American Community Survey (ACS), Behavioral Risk Factor Surveillance Survey (BRFSS), and National Health Interview Survey (NHIS). I restrict each sample to individuals between 60 and 70 years old, resulting in 3.1 million observations from ACS, 636,000 observations in BRFSS, and 75,000 observations in NHIS.

The American Community Survey is the most comprehensive source for this study, as it provides state-level identifiers and detailed information on respondents' insurance types. Of interest to this study is the question asking: "Is this person currently covered by any of the following types of health insurance or health coverage plans?" Respondents may identify more than one type of insurance coverage from the following choices: employer or union, direct purchase from an insurance company, Medicare, Medicaid, Veterans Administration, TRICARE, and Indian Health Service.

Second, I use the Behavioral Risk Factor Surveillance Survey. For this study, I focus on the question "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, government plans such as Medicare, or Indian Health Service?" The respondent is given a binary choice, unless they refuse to answer or do not know.

Finally, I use the National Health Interview Survey, which unfortunately does not provide state identifiers, to verify my results and maintain consistency with other studies. I focus on the set of questions in the family health insurance module. I measure any health insurance coverage from the question "Are you covered by an kind of health insurance or some other kind

of health plan?” and specific types of insurance with the follow-up question “What kind of health insurance do you have?” The options offered to the respondent are: Private Health Insurance, Medicare, Medigap, SCHIP, Military Health Coverage (TRICARE, VA, CHAMPUS), Indian Health Service, State Sponsored Plan, Other Government Plan, and Single Service Plan.

Descriptive statistics for data associated with each of these sources can be found in Table 1. Prior to the Affordable Care Act, the insurance rate among 60-64 year olds ranged from 87.4% (in BRFSS) to 88.3% (in NHIS), compared to an average of 98.4% among 65-70 year olds, as shown in Table 1. After the ACA, the insurance rate for the elderly remained steady, but for the near-elderly, there was a substantial increase in insurance rates to 91.7% due to the ACA. Just over half the observations are female, and the fraction of females increases after age 65. Approximately 2 of every 3 individuals in each sample are married both before and after age 65. Because of the conflicting definitions of employment in each survey, the fraction of individuals employed varies by data source; however, the decline in employment before compared to after age 65 is consistent across all samples. Across all surveys, approximately 11.7% to 15.7% of respondents had left school prior to obtaining a diploma, while 25% to 29% obtained a high school diploma or GED. On average, 30% to 32% have completed postsecondary education or continued to obtain higher level degrees.

### **3.2 Research Design**

To estimate the change in insurance coverage due to the ACA at age 65, I use a Difference-in-Regression-Discontinuity (DiRD or DD-RD) design. I compare the difference in insurance for near-elderly individuals prior to ACA implementation to the elderly who are enrolled in Medicare after ACA implementation. I first estimate the difference in insurance rates at the threshold just prior to individuals becoming eligible for Medicare at age 65. Second, I estimate the magnitude of the change in the insurance rate among near-elderly adults.

First, I replicate the Card et al. (2008) regression discontinuity design, utilizing the change in Medicare eligibility that occurs among nearly every US citizen at age 65. The main outcome of interest,  $Y_{it}$ , is insurance rate. For individual  $i$  in time  $t$ , outcome  $Y_{it}$  is modeled as:

$$Y_{it} = \alpha_0 + \alpha_1(\mathit{PostAge65}_i) + \alpha_2 f(\mathit{Age}_{it}) + \mathbf{X}'_{it} \alpha_3 + \gamma_t + \epsilon_{it} \quad (1)$$

In this equation,  $\mathit{PostAge65}$  is an indicator that equals one if the individual is age 65 or older. The coefficient  $\alpha_1$  measures the magnitude of the abrupt discontinuity of the probability of being insured upon reaching age 65.

The second difference is based on the date of implementation for the two relevant pieces of the law—Medicaid expansion and creation of the exchanges. Most states that expanded Medicaid did so in January 2014; it should follow that outcomes would be most strongly affected in 2014-2016 compared to 2009-2013. The same applies to insurance obtained through the exchanges, which became active in January 2014. I combine the Regression Discontinuity in Equation 1 with a differences-in-differences model to measure the effect of the ACA on the disparity in insurance rates at the age 65 discontinuity. This is estimated by:

$$Y_{it} = \beta_0 + \beta_1(\mathit{PostAge65}_i * \mathit{PostACA}_t) + \beta_2 f(\mathit{Age}_{it}) + \mathbf{X}'_{it} \beta_3 + \delta_t + \epsilon_{it} \quad (2)$$

In Equation (2),  $\mathit{PostACA}$  is an indicator that equals one in 2014 and after. The coefficient  $\beta_1$ , is an estimate of change in insurance rates at the age 65 threshold between pre- and post-ACA periods. I also include a set of controls, including indicators for marital status, sex, education level, race, and employment status in this regression. Finally, I include a linear function of an individual's age as well as time fixed effects and cluster by age.

## 4 Results

For consistency and clarity, I discuss only the results from the American Community Survey. Estimates from BRFSS and NHIS, shown in Appendix A, are consistent with these results.

### 4.1 Full Sample

Figure 1 highlights the usefulness of an RD-DD framework to estimate the effect of the ACA on insurance rates for the near-elderly as they approach Medicare age. This figure shows the probability of being insured for individuals between age 60 and 70 both before and after the ACA. Insurance rates for those aged 65 to 70 do not change over time. Insurance rates for the near-elderly, however, change substantially. Prior to the ACA, the difference in the insurance rate at the threshold was 9 percentage points on a base of 88.7%. After the ACA, the difference at the cutoff decreases to 5.9 percentage points. Figure 2 plots the year-by-year discontinuity in insurance rates at the Medicare eligibility threshold. (Of note is the slight decrease in the uninsurance rate in 2013. This early effect can be attributed to a combination of early expansions in some states and the “woodwork” effect, where previously eligible individuals take up Medicaid due to increased publicity and the threat of penalties.) In the first year of widespread ACA implementation, the disparity in insurance rates at the age 65 threshold dropped 1.2 percentage points ( $p < 0.001$ ) from 8.1% to 6.9%.<sup>5</sup> The change in insurance coverage in the second year of implementation was slightly smaller (0.9 percentage points), but there was another substantial drop in 2016 of 1.45 percentage points. In total, the gap in insurance rates at the threshold was reduced by 44% due to newly enacted ACA coverage provisions.

Several other pieces of evidence suggest that these changes in the age 65 discontinuity are due to the ACA. Since policies associated with the Affordable Care Act were aimed at

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<sup>5</sup>RD estimates may be biased toward zero in 2014 as the open enrollment period extended through March 31, 2014 or beyond for some. See Claxton et al. (2014) for more details.

expanding Medicaid and providing an avenue for individuals to purchase private insurance, it is reasonable to expect changes only in these two types of insurance. Figure 3 graphs the RD estimates of the change in the probability of having Medicaid as the sole source of insurance at age 65. Prior to 2014, only 4.4% of 63- and 64- year-olds were insured by Medicaid alone. Medicaid expansion after the first year resulted in an increase of 2.3 percentage points, followed by another 1.2 percentage point increase in 2015 and 2016. Combined, the average effect of Medicaid expansion resulted in a decrease in the insurance rate gap at the age 65 threshold by 3.5 percentage points. I find similar effects on private insurance coverage, shown in Figure 3b. Prior to the ACA, approximately 10% of the near-elderly population purchased insurance directly. Marketplaces were open to the public in the final months of 2013 for coverage in 2014. In the first year of marketplace offerings, the the fraction of individuals gaining coverage via the private market insurance rate changed by less than one percentage point. Coverage via the marketplace further reduced the gap in insurance coverage at the cutoff by 1.4 percentage points in 2015 and 1 percentage point in 2016.

I further show the changes in other types of insurance and, by extension, changes in the discontinuity at age 65, as individuals become eligible to enroll in Medicare are negligible after the ACA became law. Columns 1, 4, and 7 in Table 2 display the difference in magnitude at the cutoff for Medicare, Employer Sponsored Insurance (ESI), and any combination of two or more types of insurance. In order for the changes in the magnitude of the discontinuity to be due to the ACA, the year-on-year estimates must remain constant for Medicare and those who have insurance from two or more sources. Among the full sample, there were no statistically significant changes in the discontinuity gap at the age 65 cutoff for those enrolled in Medicare, ESI, or two or more sources of insurance.

## 4.2 Low Income Earning <139% FPL

Before the ACA, the gap in insurance coverage at the cutoff is twice as large in individuals earning less than 139% of the FPL compared to the overall population: reaching Medicare eligibility age increases insurance coverage 14 percentage points relative to a base of 78.5%. The ACA specifically targeted this group, and reduced the uninsurance rate among low-income 63- and 64-year-olds by 6.3 percentage points, closing the gap at the threshold by 45%.

Figure 4a plots the magnitude of the discontinuity by year for low-income Medicaid enrollees. Expansion of Medicaid for low-income childless adults resulted in immediate changes for this group; after a slight increase in the gap at the cutoff in 2013, the difference in insurance coverage at age 65 reached a new low in 2014 and continued to decline in 2015 and 2016. Overall, the ACA, through Medicaid expansions and increased take-up of previously eligible individuals in all states, reduced the insurance coverage gap at the cutoff by 7 percentage points.

Point estimates by year are charted for the change in private insurance coverage are shown in Figure 4b. Overall, the ACA increased private insurance rates among the low-income near-elderly; this is due to take-up of private insurance by those earning between 100% and 138% of the FPL and living in states that did not expand Medicaid. There was no effect of the ACA on private market coverage for those earning less than 100% of the FPL.<sup>6</sup>

Columns 2 and 8 of Table 2 show there is no change in the discontinuity upon reaching age 65 in the fraction of individuals with Medicare and two or more types of insurance coverage. However, the probability of having Employer Sponsored Insurance while earning <139% of the FPL drops by 2.3 percentage points after the ACA, as shown in column 2. This is inconsistent with the hypothesis that only insurance coverage rates of Medicaid and private insurance change while other types remain constant. Rather, it suggests a potential crowd-out effect for this low-income population; becoming eligible for a health insurance option with low- to no-cost sharing

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<sup>6</sup>See supplemental Table A1 in Appendix C

drives employed, low-income individuals away from (potentially expensive) Employer Sponsored Insurance to Medicaid. This is consistent with the results reported by Kaestner et al. (2015), but at odds with the analysis of Frea et al. (2017).

### **4.3 Low Income, Earning Between 139% and 400% FPL**

Prior to the ACA, the insurance coverage rate for 63- and 64-year-olds earning between 139% and 400% of the FPL was 87.2%, about 8.5 percentage points higher than the rate for individuals earning less than 139% of the FPL. Making health insurance marketplaces available to this group reduces the uninsurance rate by 4.45 percentage points.

Figure 5b plots the year over year estimates of the change in the probability of those who earn 139-400% of the FPL having private insurance at the discontinuity. This figure shows the change in insurance prevalence among those aged 63 and 64 by year. Figure 5a plots the same for Medicaid. Although Medicaid expansion did not directly apply to this group, there were still statistically significant increases in the fraction of 63 and 64-year-olds insured; the ACA increased Medicaid insurance coverage for this group by 2.64 percentage points. These increases are explained by take-up in state-sponsored plans that offered basic health insurance for individuals earning up to 200% FPL.

## **4.4 Stratification by Education Level and Ethnicity**

### **4.4.1 Any Insurance**

The first row of each category in Table 3 shows the mean insurance rate of 63- and 64-year-olds and estimated jump in insurance rates at the cutoff. The second row shows the change in the magnitude of the discontinuity that is due to the ACA. Overall, insurance coverage upon reaching age 65 increases by 7.97 percentage points on a base of 90.1%. Prior to the ACA, 88.5% of 63 and 64 year olds had some type of health insurance. Upon reaching age 65, this

increases by 10 percentage points. There is no effect on insurance rates for the elderly due to the ACA; before 2014, 98.2% of 65- to 67-year-olds were insured, whereas 98.5% of this group was insured after 2014. The change in the prevalence of insurance, 3.44 percentage points, is due to ACA coverage provisions. This is graphically shown in Figure 1 referenced earlier.

#### **4.4.2 By Ethnicity**

Medicare is often touted as equalizing racial and socioeconomic disparities in health insurance and health care access (Card et al., 2008). Prior research suggests the ACA may not have the same effect; Shane & Ayyagari (2014) found that the dependent coverage mandate increased insurance rates for all groups, but did not reduce disparities among low-income populations. Estimates presented in Table 3 reinforce those results. The prevalence of any health insurance among near-elderly Non-Hispanic whites is higher than the national average in these data, driven by high rates of private and employer sponsored insurance; reaching Medicare-eligibility age adds 7.3 percentage points to a base of 91.4%. Non-Hispanic blacks have a lower prevalence of any kind of insurance prior to reaching age 65. However, reaching Medicare eligibility age increases the prevalence of health insurance by 8.49 percentage points.

The effect of the ACA on insurance coverage also varies both in the magnitude and the mechanism through which insurance is obtained. The ACA closed the insurance coverage gap by 2.9 percentage points in whites and 2.61 percentage points in blacks. This alone is notable in that prior to the ACA, insurance rates among 63- and 64-year-old whites were 4 percentage points higher than those of blacks; one would expect more substantial changes in the group with lower initial rates of insurance coverage. The difference is even larger among other races; the ACA reduced the insurance coverage gap by 8.69 percentage points at the cutoff, but their initial insurance coverage is 10 percentage points lower than that of whites. The difference in the source of newly obtained insurance coverage is notable, as shown in Table 3. Specifically,

take-up of private health insurance after the ACA among blacks and whites is similar (2.5 and 3.11 percentage points, respectively), but Medicaid enrollment among blacks after the ACA is nearly three times that of whites (3.6 and 1.38 percentage points, respectively) on a base mean that is already 2.5 times that of whites (10.5% vs 4.08%).

#### **4.4.3 By Education Status and Ethnicity**

The changes in insurance rates upon reaching Medicare eligibility are mixed when stratifying by education status (not shown). It is expected those with the lowest levels of education would benefit more from new coverage provisions compared to those with a college degree. However, what is surprising is the difference when stratifying by race and education level. Reaching Medicare enrollment age increases the likelihood of blacks who did not complete high school having insurance coverage by 12.4 percentage points, while the effect is only 3.64 percentage points for their white high educated counterparts. Combined with a substantial 15 percentage point difference in insurance rates prior to Medicare eligibility, reaching age 65 closes the gap between these two subgroups by 10 percentage points. This is demonstrated graphically in Figure 6.

Coverage provisions provided through the ACA closed the gap in insurance prevalence at age 65 by 4.58 percentage points for low educated blacks, while the effect was less than 1 percentage point for high educated whites. This is not surprising; high educated whites were three times more likely than low educated blacks to have employer-sponsored coverage, which was subject to few substantial changes under the ACA.

#### **4.5 Medicaid Expansion vs Health Insurance Exchanges**

Sources of new insurance coverage varied based on whether or not a state expanded Medicaid to low-income individuals. Figure 7 shows the private market and Medicaid insurance rates for

expansion and non-expansion states before and after the ACA. In states that did not expand Medicaid, the fraction of individuals with Medicaid coverage increased slightly after the ACA, but the prevalence of private coverage increased significantly. For Medicaid expansion states, there was an increase in private coverage and substantial increase in Medicaid recipients.

Table 4 contains point estimates reflecting the change in Medicaid and private insurance (outcomes are mutually exclusive) for individuals aged 63 or 64 just prior to transitioning into Medicare. Columns 1 through 3 show how the ACA affected insurance coverage through Medicaid in states that expanded the program compared to those that did not expand Medicaid. Prior to expansion, around 3.4% percent of individuals were insured through Medicaid in non-expansion states, lower than the five percent in expansion states. After the implementation of the ACA, there was 0.7 percentage point increase in the Medicaid insurance rate in non-expansion states due to a “woodwork effect.” In expansion states, the ACA increased the Medicaid insurance rate by 3.9 percentage points. Post-ACA Medicaid uptake is 3.13 percentage points higher in expansion states than non-expansion states for the overall near-elderly population.

Columns 4 through 6 show the same results for individuals with private coverage. Just under 9.2% of 63 and 64 year-olds in non-expansion states had private insurance prior to the ACA. After ACA implementation, the share of individuals purchasing directly or via the exchange increased by 4.8 percentage points. In Medicaid expansion states, the fraction purchasing private insurance increased by 2.65 percentage points on a base of 10%. Post-ACA private coverage uptake is 2.2 percentage points higher in non-expansion states than expansion states.

Medicaid coverage gains in expansion states are concentrated among low-income individuals: the change in Medicaid coverage due to the ACA is 10 percentage points in these states. Overall, the ACA increased Medicaid coverage by 7 percentage points among low-income near-elderly individuals, composed mostly of Medicaid gains in expansion states. Gains in coverage

through Medicaid in expansion states exceeded that in non-expansion states by 8.23 percentage points, while coverage gains through private insurance in non-expansion states exceeded gains in expansion states by 4.53 percentage points.

While there were coverage gains in both expansion and non-expansion states, the sources of the insurance increase were different. In states that expanded Medicaid, approximately 60% of the insurance gains ( $3.9/(3.9+2.65)$ ) can be attributed to Medicaid and the remaining 40% were through private insurance. For states that did not expand Medicaid, only 14% of insurance gains ( $0.75/(0.75+4.82)$ ) are through Medicaid, while 86% are through private insurance.

## 5 Discussion

This paper evaluates the effects of the ACA on insurance rates of the near-elderly population just prior to entering Medicare. The disparity between insurance rates at the age 65 threshold prior to the ACA was nearly 8 percent. After the ACA became law, the gap at age 65 decreased by 3.4 percentage points. The ACA narrowed but did not close the insurance disparity; the gap in insurance prevalence at age 65 declined by 2.61 percentage points in non-Hispanic blacks and 8.7 percentage points for other races compared to 2.99 percentage points for whites. However, the mean insurance rate of near-elderly whites is still substantially higher than that of other races both before and after the law went into effect. Of the newly insured, nearly half were previously uninsured for three years or more. Sixty percent of newly insured people in states that expanded Medicaid obtained insurance through Medicaid, while 86% of individuals in non-expansion states obtained insurance through the health insurance exchanges.

There are a few limitations to this study. First, while it would be ideal to have monthly or quarterly survey data, none of the data sources provides such granularity. This means the variance of each regression is based on five age clusters. However, the large sample size used

in the ACS is sufficient enough to offset concerns about variance. Second, this study would ideally use longitudinal data, which would allow me to track the near-elderly into Medicare and examine their use habits. Finally, as discussed in Claxton et al. (2014), the time frame in which these surveys are conducted leaves open the possibility of differences in estimates between the surveys used in this paper and any estimates from other literature studying this topic.

This paper raises several questions about the relationship between the ACA and Medicare near the age of transition. It is known that long term uninsured individuals utilize more services immediately after gaining insurance, perhaps due to newly-diagnosed conditions (Kaufman et al., 2015) or pent-up demand. What is still up for debate are the implications for Medicare spending compared to Medicaid or private market insurance in the long run. There are two possibilities: either individuals newly insured through the ACA smooth consumption of medical services prior to entering Medicare then utilize fewer services upon entry into Medicare, or newly insured individuals consume more services both before and after entering Medicare (ex-post moral hazard). If the former is the case, a valid argument can be made that reducing the near-elderly uninsurance rate may curb Medicare spending growth by shifting costs of health care to states through Medicaid or to the insurers on the exchange. If the latter is the case, the implications are uncertain, as it is possible newly insured are engaging in ex-post moral hazard or their health status upon gaining insurance is poor, requiring more care to manage chronic health conditions.

The results of this paper also raise the possibility of Medicaid crowd-out among low-income, employed 63- and 64-year-olds. The reasons for the shift from ESI to Medicaid are unclear; eligible individuals may learn of their eligibility under new coverage conditions and choose to drop the employer plan or employers may decide against offering plans to the group that is newly eligible for Medicaid. More analysis is necessary to confirm this. However, should this be supported with further research, the implications of this phenomenon are ambiguous. Because

Medicaid cost sharing is low and benefits are generous, low-income near-elderly enrollees can obtain necessary health care at a lower out of pocket cost. However, although there is potential for consumption smoothing across the transition into Medicare, the true costs of care prior to reaching age 65 would be transferred from employers to states and the federal government.

Finally, an important long term measurable effect of the ACA in general is whether it reduced morbidity or mortality. Previous large scale government interventions providing health care and health insurance (Medicare and Medicaid) have resulted in substantial improvements in mortality (Card et al., 2009; Chay et al., 2010; Goodman-Bacon, forthcoming), particularly at the outset of those programs. Future evaluations of the short- and long-term effects on mortality and morbidity on both Medicaid expansion and private insurance will inform future policy on health care and health insurance reform.

## References

- Barbaresco, S., Courtemanche, C. J., & Qi, Y. (2015). Impacts of the Affordable Care Act dependent coverage provision on health-related outcomes of young adults. *J. Health Econ.*, *40*, 54–68.
- Card, D., Dobkin, C., & Maestas, N. (2008). The Impact of Nearly Universal Insurance Coverage on Health Care Utilization : Evidence from Medicare. *Am. Econ. Rev.*, *98*(5), 2242–2258.
- Card, D., Dobkin, C., & Maestas, N. (2009). Does Medicare Save Lives? *Q. J. Econ.*, *124*(2), 1–33.
- Chay, K. S., Kim, D., & Swaminathan, S. (2010). Medicare, Hospital Utilization, and Mortality: Evidence from the Program’s Origins. (pp. 1–67).
- Claxton, G., Levitt, L., Brodie, M., Garfield, R., & Damico, A. (2014). Measuring Changes in Insurance Coverage Under the Affordable Care Act. Tech. rep.
- Courtemanche, C., Marton, J., Ukert, B., Yelowitz, A., & Zapata, D. (2017). Early Impacts of the Affordable Care Act on Health Insurance Coverage in Medicaid Expansion and Non-Expansion States. *J. Policy Anal. Manag.*, *36*(1), 178–210.
- Decker, S. L., Doshi, J. A., Knaup, A., & Polsky, D. (2012). Health Service Use among the Previously Uninsured: Is Subsidized Health Insurance Enough? *Health Econ.*, *21*(10), 1–18.
- United States Census Bureau (2016). American Community Survey (ACS) 1-year Public Use Microdata Sample (PUMS)-concatenated, 2009-2016 [data set].  
URL <https://www.census.gov/programs-surveys/acs/data/pums.html>
- National Center for Health Statistics (2016). National Health Interview Survey-appended, 2009-

2016 [data set].

URL <https://www.cdc.gov/nchs/nhis/data-questionnaires-documentation.htm>

Frean, M., Gruber, J., & Sommers, B. D. (2017). Premium Subsidies, The Mandate, And Medicaid Expansion: Coverage Effects of the Affordable Care Act. *J. Health Econ.*, 53, 72–86.

French, M. T., Homer, J., Gumus, G., & Hickling, L. (2010). Key Provisions of the Patient Protection and Affordable Care Act ( ACA ): A Systematic Review and Presentation of Early Research Findings. *Health Serv. Res.*, 51(5), 1735–1771.

Goodman-Bacon, A. (forthcoming). Public insurance and mortality: Evidence from medicaid implementation. *Journal of Political Economy*.

URL <https://doi.org/10.1086/695528>

Grembi, V., Nannicini, T., & Troiano, U. (2012). Policy responses to fiscal restraints: A difference-in-discontinuities design.

URL [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2178962](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2178962)

Kaestner, R., Garrett, B., Gangopadhyaya, A., & Fleming, C. (2015). Effects Of ACA Medicaid Expansions On Health Insurance Coverage and Labor Supply.

URL <http://www.nber.org/papers/w21836>

Kaufman, H. W., Chen, Z., Fonseca, V. A., & McPhaul, M. J. (2015). Surge in newly identified diabetes among medicaid patients in 2014 within medicaid expansion states under the affordable care act. *Diabetes Care*, 38, 833–837.

Long, S. K., Bart, L., Karpman, M., Shartzter, A., & Zuckerman, S. (2017). Sustained gains in coverage, access, and affordability under the ACA: A 2017 update. *Health Aff.*, 36(9), 1656–1662.

- McCrary, J. (2008). Manipulation of the running variable in the regression discontinuity design: A density test. *Journal of econometrics*, *142*(2), 698–714.
- McWilliams, J. M., Meara, E., Zaslavsky, A. M., & Ayanian, J. Z. (2007). Use of health services by previously uninsured Medicare beneficiaries. *N Engl J Med*, *357*, 143–153.
- McWilliams, J. M., Meara, E., Zaslavsky, A. M., & Ayanian, J. Z. (2009). Medicare spending for previously uninsured adults. *Ann. Intern. Med.*, *151*(11), 757–766.
- McWilliams, J. M., Zaslavsky, A. M., Meara, E., & Ayanian, J. Z. (2004). Health insurance coverage and mortality among the near-elderly. *Health Aff.*, *23*(4), 223–233.
- Rosenbaum, S., & Westmoreland, T. M. (2012). The Supreme Court’s Surprising Decision On The Medicaid Expansion: How Will The Federal Government And States Proceed? *Health Aff.*, *31*(8), 1663–1672.
- Shane, D. M., & Ayyagari, P. (2014). Will Health Care Reform Reduce Disparities in Insurance Coverage ? Evidence From the Dependent Coverage Mandate. *Med. Care*, *52*(6), 528–534.
- Simon, K., Soni, A., & Cawley, J. (2017). The Impact of Health Insurance on Preventive Care and Health Behaviors: Evidence from the First Two Years of the ACA Medicaid Expansions. *J. Policy Anal. Manag.*, *36*(2), 390–417.
- Sommers, B. D., Kenney, G. M., & Epstein, A. M. (2014). New Evidence on the Affordable Care Act: Coverage Impacts of Early Medicaid Expansions. *Health Aff.*, *33*(1), 78–87.
- Sommers, B. D., Maylone, B., Blendon, R. J., John Orav, E., & Epstein, A. M. (2017). Three-year impacts of the affordable care act: Improved medical care and health among low-income adults. *Health Aff.*, *36*(6), 1119–1128.

The Henry J. Kaiser Family Foundation (2017). Key Facts about the Uninsured Population.

URL <https://www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/>

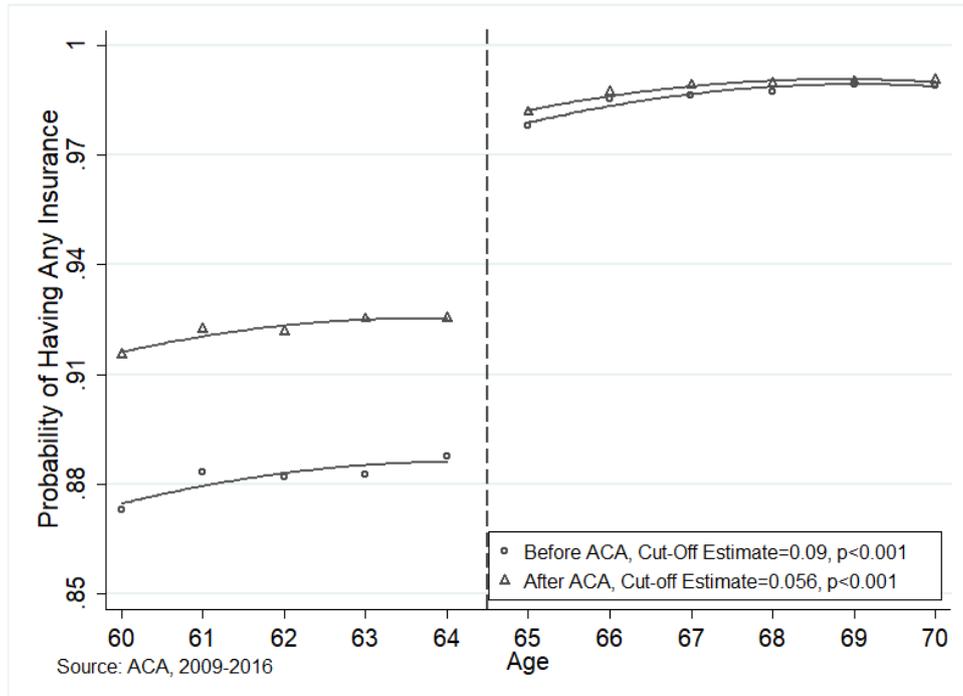
Wherry, L., & Miller, S. (2016). Early Coverage, Access, Utilization, and Health Effects of the Affordable Care Act Medicaid Expansions: A Quasi-Experimental Study. *Ann. Intern. Med.*, *164*(12), 795–803.

Wilper, A. P., Woolhandler, S., Lasser, K. E., McCormick, D., Bor, D. H., & Himmelstein, D. U. (2009). Hypertension, diabetes, and elevated cholesterol among insured and uninsured U.S. adults. *Health Aff. (Millwood)*, *28*(6).

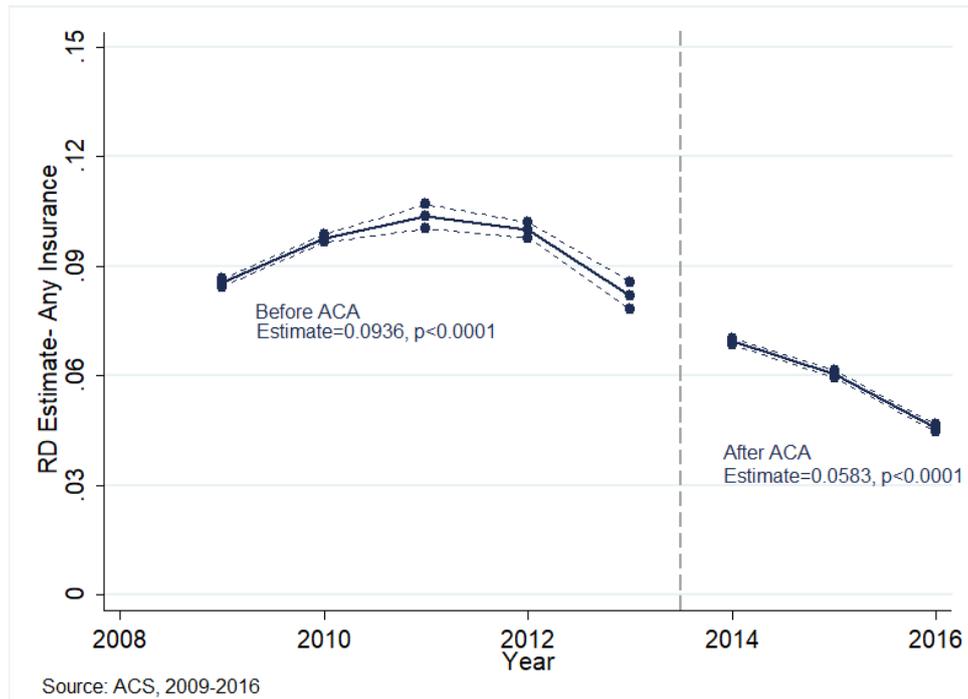
## 6 Main Results

### 6.1 Main Figures

**Figure 1:** Probability of Being Insured at Age 65 Cutoff, Before vs After the ACA.  
Source: ACS, 2009-2016



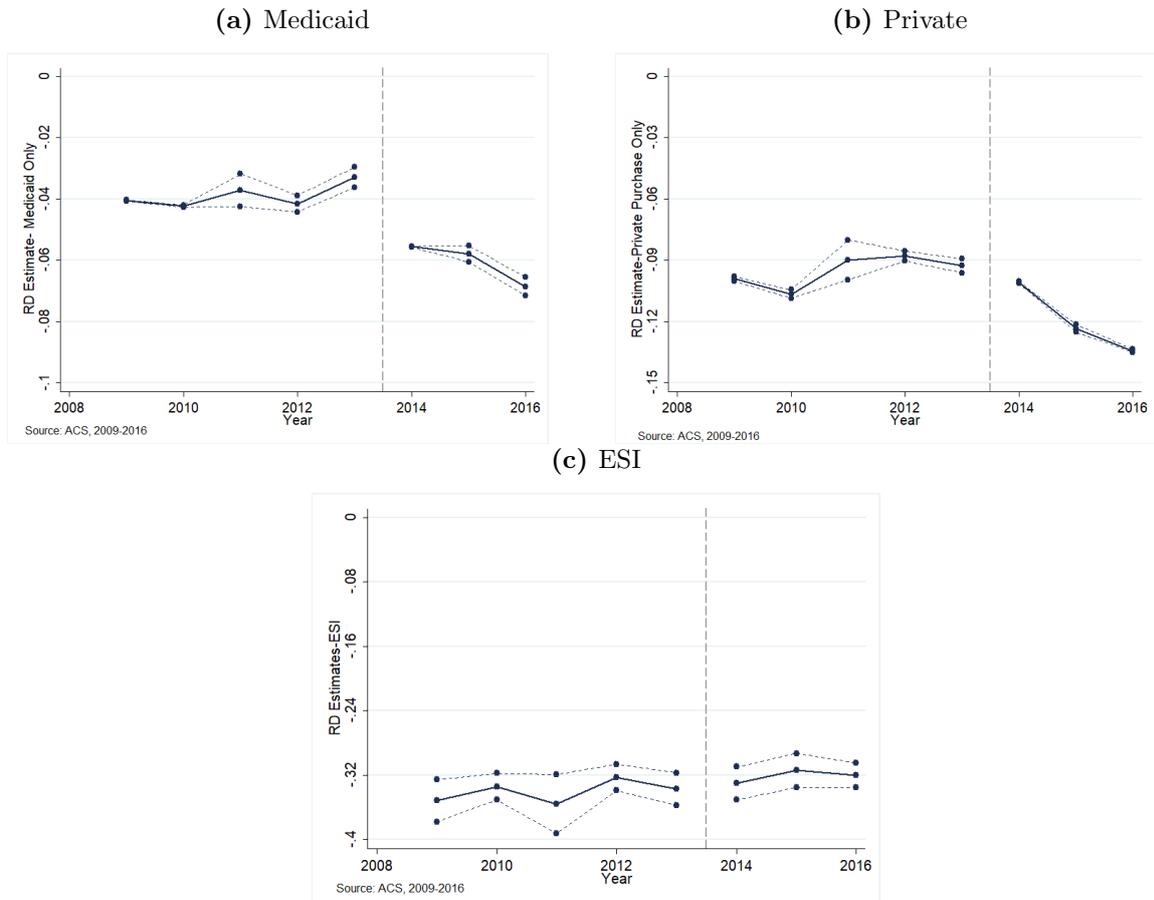
**Figure 2:** Estimates of the Effect of the ACA on Having Insurance at the Age 65 Discontinuity  
 Source: ACS, 2009-2016



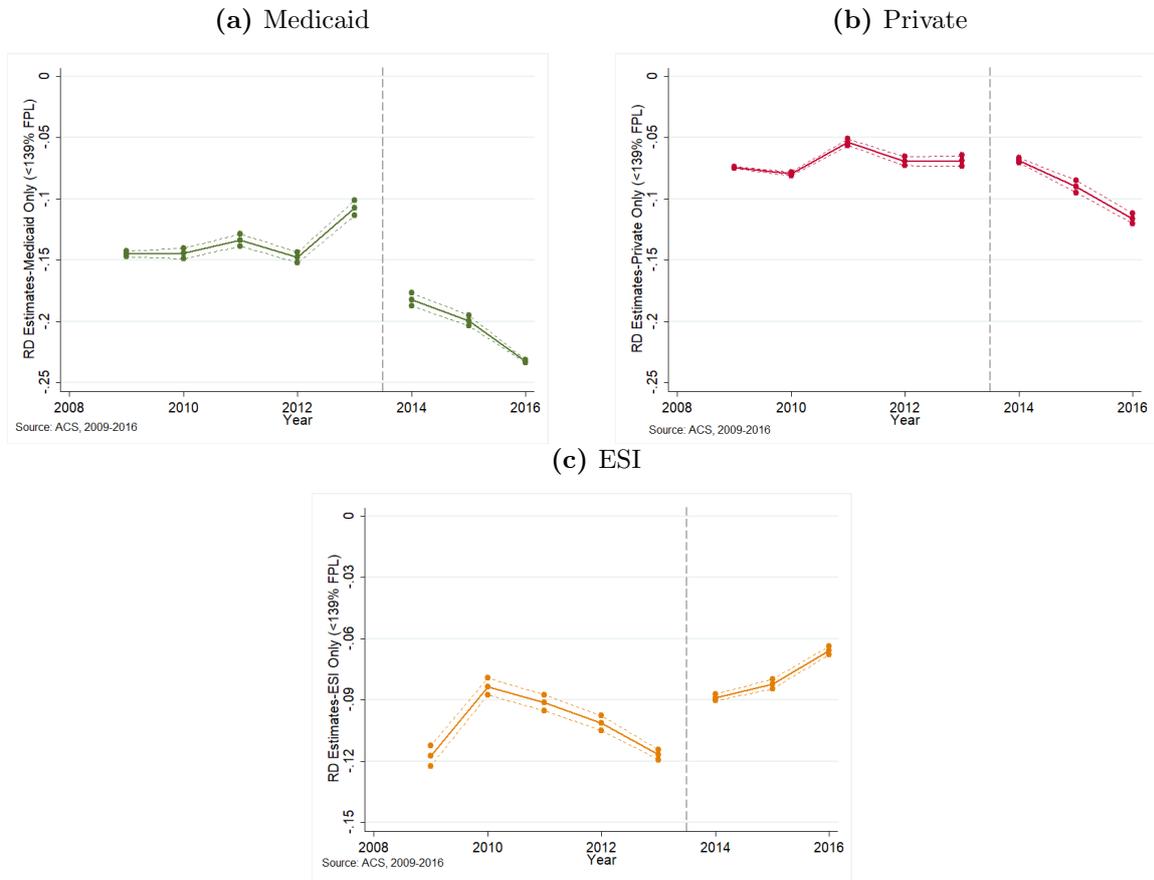
This chart shows the year-by-year regression-adjusted RD estimates of the change in coverage rates for any insurance at the cutoff at age 65. The estimates to the left of the gray reference line represent years prior to the ACA. The difference in the mean of the insurance gap at the cutoff before and after the ACA is 3.44 percentage points.

Regression includes state-level dummies, controls for sex, employment status, education level, race, and marital status. Standard errors are clustered by age.

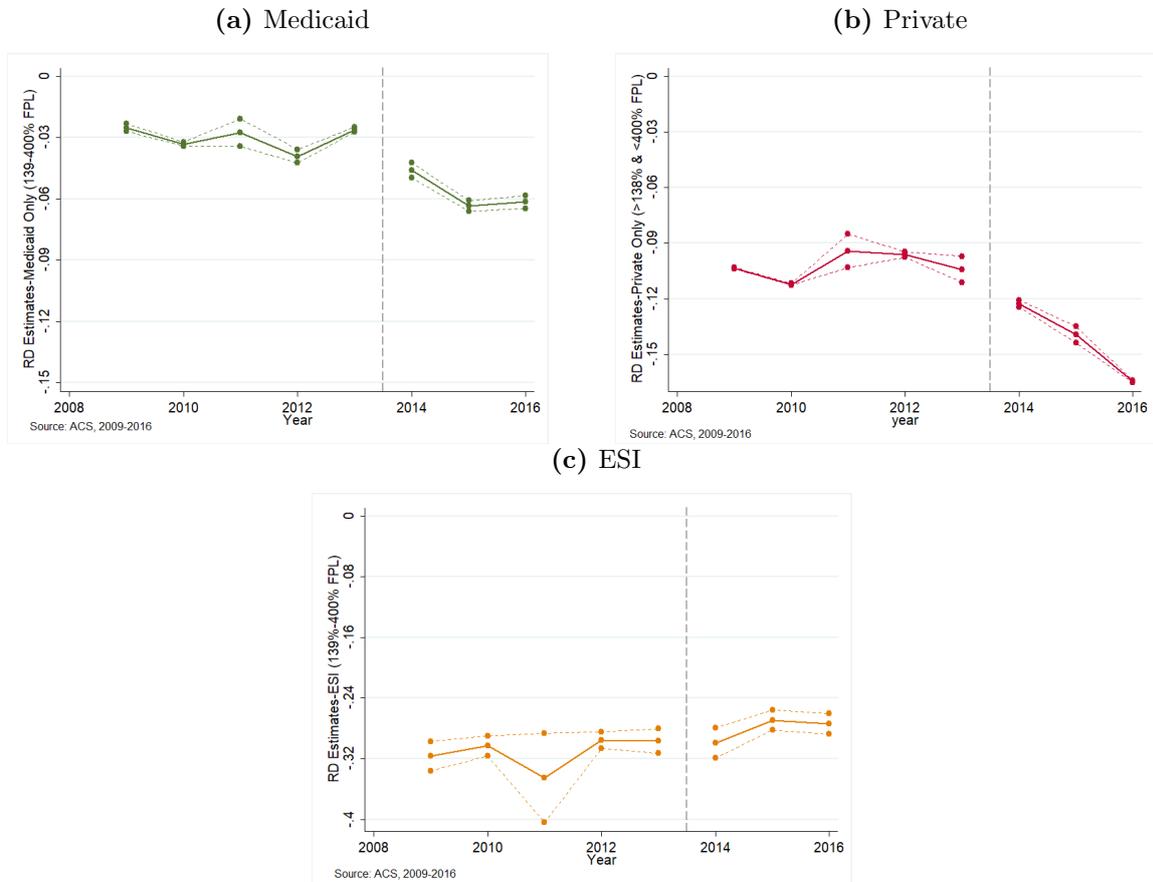
**Figure 3: RD Estimates of the Effect of the ACA on Age 65 Discontinuity**  
 Source: ACS, 2009-2016



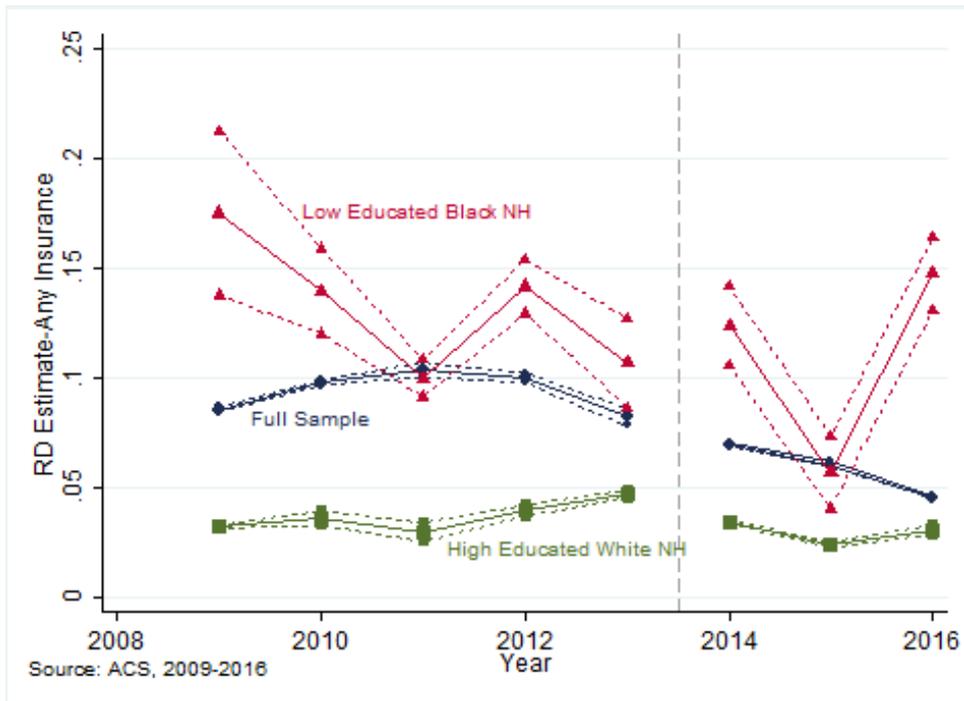
**Figure 4:** RD Estimates of the Effect of the ACA on Age 65 Discontinuity for Low Income Near-Elderly Individuals (<139% FPL)  
 Source: ACS, 2009-2016



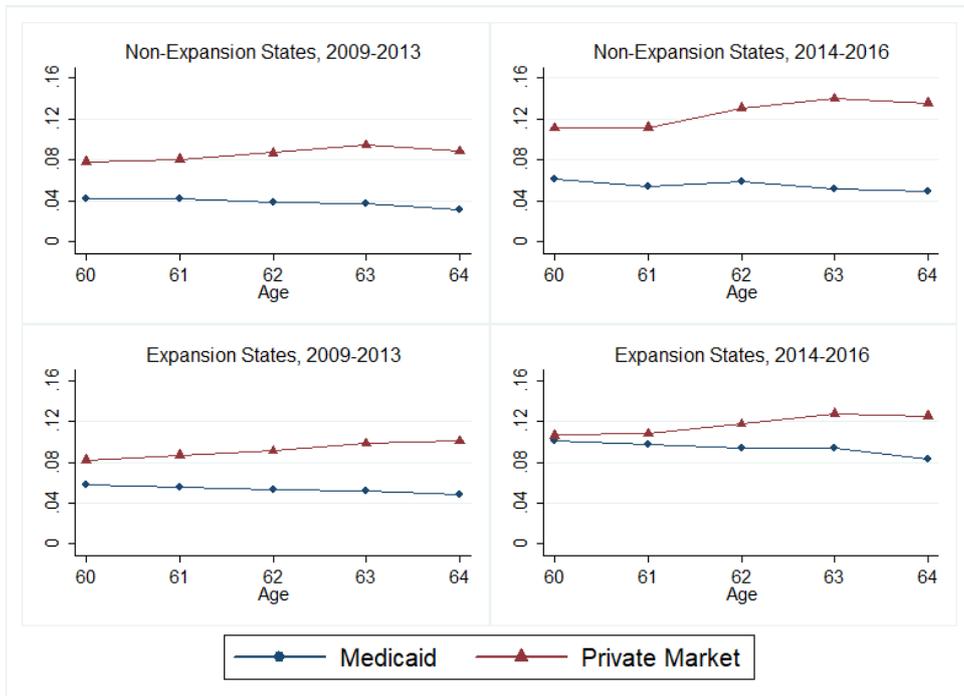
**Figure 5:** RD Estimates of the Effect of the ACA on Age 65 Discontinuity for Low Income Near-Elderly Individuals (139% -400% FPL)  
 Source: ACS, 2009-2016



**Figure 6:** RD Estimates by Ethnicity and Education Type  
 Source: ACS, 2009-2016



**Figure 7:** Fraction of Medicaid vs Private Insurance by Expansion Status



6.2 Main Tables

**Table 1:** Summary Statistics, Ages 60-70

	(1)	(2)	(3)
	Full Sample	Under Age 65	Over Age 65
<b>Panel A: ACS, 2009-2016</b>			
Insured	0.930	0.881	0.986
Female	0.525	0.520	0.531
Married	0.647	0.650	0.644
Employed	0.406	0.521	0.279
Race			
White Non-Hispanic	0.819	0.810	0.830
Black Non-Hispanic	0.0997	0.105	0.0940
Other	0.0810	0.0851	0.0765
Education Level			
Less Than High School	0.133	0.119	0.148
High School Diploma or GED	0.292	0.279	0.305
Some College	0.286	0.300	0.271
College Degree or Higher	0.289	0.301	0.276
Observations	2844857	1459825	1385032
<b>Panel B: BRFSS, 2009-2016</b>			
Insured	0.921	0.874	0.978
Female	0.504	0.500	0.508
Married	0.646	0.653	0.638
Employed	0.373	0.478	0.250
Race			
White Non-Hispanic	0.806	0.799	0.813
Black Non-Hispanic	0.103	0.107	0.100
Other	0.090	0.093	0.086
Education Level			
Less Than High School	0.117	0.109	0.126
High School Diploma or GED	0.279	0.268	0.291
Some College	0.299	0.305	0.292
College Degree Or Higher	0.305	0.317	0.291
Observations	635948	313615	322333
<b>Panel C: NHIS, 2009-2016</b>			
Insured	0.926	0.883	0.975
Female	0.525	0.519	0.532
Married	0.665	0.675	0.654
Employed	0.486	0.596	0.366
Race			
White Non-Hispanic	0.815	0.804	0.827
Black Non-Hispanic	0.102	0.109	0.0946
Other	0.0826	0.0866	0.0782
Education Level			
Less Than High School	0.156	0.142	0.170
High School Diploma or GED	0.251	0.240	0.262
Some College	0.273	0.285	0.260
College Degree or Higher	0.321	0.333	0.308
Observations	74780	39172	35608

**Table 2:** Estimated Discontinuities at Age 65 Threshold-Other Insurance Types

	Medicare			ESI			Two or More		
	Full Sample	<139% FPL	139%-400%FPL	Full Sample	<139% FPL	139%-400%FPL	Full Sample	<139% FPL	139%-400%FPL
<b>2009</b>	<b>0.149</b>	<b>0.154</b>	<b>0.197</b>	<b>-0.390</b>	<b>-0.117</b>	<b>-0.343</b>	<b>0.359</b>	<b>0.261</b>	<b>0.321</b>
	(0.0005)	(0.0017)	(0.0008)	(0.0006)	(0.0018)	(0.0018)	(0.0023)	(0.0022)	(0.0010)
<b>2010</b>	<b>0.165</b>	<b>0.147</b>	<b>0.217</b>	<b>-0.358</b>	<b>-0.0835</b>	<b>-0.320</b>	<b>0.322</b>	<b>0.262</b>	<b>0.303</b>
	(0.0030)	(0.0010)	(0.0000)	(0.0023)	(0.0015)	(0.0027)	(0.0056)	(0.0013)	(0.0013)
<b>2011</b>	<b>0.180</b>	<b>0.193</b>	<b>0.223</b>	<b>-0.385</b>	<b>-0.0915</b>	<b>-0.369</b>	<b>0.338</b>	<b>0.256</b>	<b>0.300</b>
	(0.0011)	(0.0012)	(0.0022)	(0.0123)	(0.0014)	(0.0213)	(0.0031)	(0.0022)	(0.0037)
<b>2012</b>	<b>0.187</b>	<b>0.219</b>	<b>0.217</b>	<b>-0.349</b>	<b>-0.101</b>	<b>-0.311</b>	<b>0.304</b>	<b>0.257</b>	<b>0.285</b>
	(0.0005)	(0.0028)	(0.0006)	(0.0024)	(0.0013)	(0.0023)	(0.0059)	(0.0030)	(0.0013)
<b>2013</b>	<b>0.169</b>	<b>0.191</b>	<b>0.211</b>	<b>-0.368</b>	<b>-0.117</b>	<b>-0.318</b>	<b>0.330</b>	<b>0.242</b>	<b>0.311</b>
	(0.0038)	(0.0005)	(0.0061)	(0.0024)	(0.0009)	(0.0013)	(0.0028)	(0.0010)	(0.0088)
<b>2014</b>	<b>0.198</b>	<b>0.173</b>	<b>0.231</b>	<b>-0.360</b>	<b>-0.0888</b>	<b>-0.326</b>	<b>0.324</b>	<b>0.234</b>	<b>0.315</b>
	(0.0006)	(0.0012)	(0.0014)	(0.0008)	(0.0006)	(0.0032)	(0.0003)	(0.0006)	(0.0009)
<b>2015</b>	<b>0.187</b>	<b>0.173</b>	<b>0.219</b>	<b>-0.345</b>	<b>-0.0822</b>	<b>-0.284</b>	<b>0.335</b>	<b>0.255</b>	<b>0.299</b>
	(0.0005)	(0.0013)	(0.0009)	(0.0017)	(0.0009)	(0.0033)	(0.0010)	(0.0015)	(0.0009)
<b>2016</b>	<b>0.183</b>	<b>0.165</b>	<b>0.221</b>	<b>-0.342</b>	<b>-0.0658</b>	<b>-0.288</b>	<b>0.431</b>	<b>0.335</b>	<b>0.385</b>
	(0.0001)	(0.0017)	(0.0010)	(0.0023)	(0.0008)	(0.0032)	(0.0010)	(0.0015)	(0.0009)

Standard errors in parentheses

Source: ACS 2009-2016

**Table 3:** Estimated Discontinuities at Age 65 Threshold By Insurance Type

	Any Insurance		Medicare		Medicaid		Private		Employer Sponsored		Two or More	
	Mean Age 63-64	Estimate Age 63-64	Mean Age 63-64	Estimate Age 63-64	Mean Age 63-64	Estimate Age 63-64	Mean Age 63-64	Estimate Age 63-64	Mean Age 63-64	Estimate Age 63-64	Mean Age 63-64	Estimate Age 63-64
<i>Full Sample</i>												
Post-Age65	<b>0.0901</b>	<b>0.0797</b> (0.000)	<b>0.0474</b>	<b>0.179</b> (0.001)	<b>0.0553</b>	<b>-0.0479</b> (0.001)	<b>0.110</b>	<b>-0.103</b> (0.001)	<b>0.491</b>	<b>-0.364</b> (0.003)	<b>0.138</b>	<b>0.342</b> (0.001)
Post-ACA*Post-Age65		<b>-0.0344</b> (0.001)		<b>0.0185</b> (0.001)		<b>-0.0204</b> (0.001)		<b>-0.0272</b> (0.001)		<b>0.0257</b> (0.004)		<b>0.0325</b> (0.001)
<i>By Income Level</i>												
<139% FPL												
Post-Age65	<b>0.785</b>	<b>0.141</b> (0.001)	<b>0.104</b>	<b>0.180</b> (0.001)	<b>0.197</b>	<b>-0.163</b> (0.000)	<b>0.0925</b>	<b>-0.0759</b> (0.001)	<b>0.121</b>	<b>-0.0918</b> (0.000)	<b>0.205</b>	<b>0.252</b> (0.002)
Post-ACA*Post-Age65		<b>-0.0636</b> (0.002)		<b>-0.00922</b> (0.001)		<b>-0.0705</b> (0.001)		<b>-0.0169</b> (0.001)		<b>0.0211</b> (0.001)		<b>0.0253</b> (0.001)
139%-400% FPL												
Post-Age65	<b>0.872</b>	<b>0.101</b> (0.002)	<b>0.0623</b>	<b>0.215</b> (0.003)	<b>0.0481</b>	<b>-0.0405</b> (0.002)	<b>0.124</b>	<b>-0.111</b> (0.002)	<b>0.428</b>	<b>-0.313</b> (0.012)	<b>0.142</b>	<b>0.300</b> (0.005)
PostACA*Post-Age65		<b>-0.0415</b> (0.004)		<b>0.00652</b> (0.005)		<b>-0.0264</b> (0.001)		<b>-0.0445</b> (0.003)		<b>0.0534</b> (0.014)		<b>0.0242</b> (0.003)
<i>By Ethnicity</i>												
White NH:												
Post-Age65	<b>0.914</b>	<b>0.0732</b> (0.001)	<b>0.0429</b>	<b>0.180</b> (0.001)	<b>0.0408</b>	<b>-0.0358</b> (0.001)	<b>0.119</b>	<b>-0.113</b> (0.001)	<b>0.521</b>	<b>-0.392</b> (0.004)	<b>0.132</b>	<b>0.357</b> (0.001)
Post-ACA*Post-Age65		<b>-0.0299</b> (0.001)		<b>0.0224</b> (0.002)		<b>-0.0138</b> (0.001)		<b>-0.0311</b> (0.001)		<b>0.0234</b> (0.005)		<b>0.0329</b> (0.001)
Black NH:												
Post-Age65	<b>0.877</b>	<b>0.0849</b> (0.001)	<b>0.0774</b>	<b>0.160</b> (0.001)	<b>0.105</b>	<b>-0.0979</b> (0.000)	<b>0.0557</b>	<b>-0.0530</b> (0.000)	<b>0.372</b>	<b>-0.246</b> (0.001)	<b>0.191</b>	<b>0.263</b> (0.001)
Post-ACA*Post-Age65		<b>-0.0261</b> (0.000)		<b>-0.00647</b> (0.001)		<b>-0.0360</b> (0.000)		<b>-0.0250</b> (0.000)		<b>0.0420</b> (0.001)		<b>0.0511</b> (0.001)
Other:												
Post-Age65	<b>0.813</b>	<b>0.129</b> (0.005)	<b>0.0516</b>	<b>0.191</b> (0.001)	<b>0.125</b>	<b>-0.110</b> (0.002)	<b>0.0919</b>	<b>-0.0683</b> (0.001)	<b>0.367</b>	<b>-0.222</b> (0.002)	<b>0.131</b>	<b>0.286</b> (0.001)
Post-ACA*Post-Age65		<b>-0.0869</b> (0.007)		<b>0.00734</b> (0.001)		<b>-0.0365</b> (0.002)		<b>-0.0104</b> (0.001)		<b>-0.0290</b> (0.003)		<b>0.0449</b> (0.002)
<i>By Ethnicity and Education Level</i>												
Whites w/College Degree and Higher:												
Post-Age65	<b>0.957</b>	<b>0.0364</b> (0.001)	<b>0.0189</b>	<b>0.179</b> (0.001)	<b>0.0173</b>	<b>-0.0136</b> (0.001)	<b>0.139</b>	<b>-0.131</b> (0.000)	<b>0.641</b>	<b>-0.485</b> (0.002)	<b>0.0974</b>	<b>0.401</b> (0.002)
Post-ACA*Post-Age65		<b>-0.00965</b> (0.002)		<b>0.0342</b> (0.002)		<b>-0.000799</b> (0.002)		<b>-0.0220</b> (0.000)		<b>0.0174</b> (0.002)		<b>0.0382</b> (0.004)
Blacks w/Less Than HS Diploma												
Post-Age65	<b>0.82</b>	<b>0.124</b> (0.001)	<b>0.116</b>	<b>0.128</b> (0.002)	<b>0.211</b>	<b>-0.195</b> (0.002)	<b>0.0392</b>	<b>-0.0315</b> (0.000)	<b>0.187</b>	<b>-0.0992</b> (0.003)	<b>0.220</b>	<b>0.288</b> (0.001)
Post-ACA*Post-Age65		<b>-0.0458</b> (0.002)		<b>-0.0348</b> (0.002)		<b>-0.0422</b> (0.002)		<b>-0.0188</b> (0.000)		<b>-0.0150</b> (0.002)		<b>0.118</b> (0.004)

Source: ACS, 2009-2016. Insurance types are mutually exclusive. Standard errors in parentheses and clustered by age.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 4:** Changes in Medicaid and Private Insurance Uptake by Medicaid Expansion Status  
Mutually Exclusive Sources of Insurance  
Source: ACS, 2009-2016

	(1)	(2)	(3)	(4)	(5)	(6)
	Medicaid Non-Expansion State	Medicaid Expansion State	Medicaid Full Sample	Private Non-Expansion State	Private Expansion State	Private Full Sample
Mean, Age 63-64	<b>0.0344</b>	<b>0.0502</b>		<b>0.0916</b>	<b>0.0995</b>	
Post-ACA	<b>0.00746***</b> (0.0013)	<b>0.0389***</b> (0.0050)		<b>0.0482***</b> (0.0039)	<b>0.0265***</b> (0.0020)	
Expanded			<b>-0.00365</b> (0.0078)			<b>0.00982</b> (0.0069)
Post-ACA*Expanded			<b>0.0313***</b> (0.0051)			<b>-0.0218***</b> (0.0043)
College Degree or Higher:						
Mean, Age 63-64	<b>0.007</b>	<b>0.0172</b>		<b>0.120</b>	<b>0.122</b>	
Post-ACA	<b>0.00265**</b> (0.0008)	<b>0.0261**</b> (0.0073)		<b>0.0360***</b> (0.0042)	<b>0.0261***</b> (0.0026)	
Expanded			<b>0.00187</b> (0.0069)			<b>0.00363</b> (0.0089)
Post-ACA*Expanded			<b>0.0232**</b> (0.0073)			<b>-0.00986</b> (0.0050)
Less Than HS Diploma:						
Mean, Age 63-64	<b>0.115</b>	<b>0.171</b>		<b>0.0543</b>	<b>0.0539</b>	
Post-ACA	<b>0.0122*</b> (0.0049)	<b>0.0766***</b> (0.0131)		<b>0.0414***</b> (0.0053)	<b>0.0249***</b> (0.0045)	
Expanded			<b>-0.0260</b> (0.0201)			<b>0.00583</b> (0.0133)
Post-ACA*Expanded			<b>0.0637***</b> (0.0136)			<b>-0.0168*</b> (0.0070)
< 139% FPL:						
Mean, Age 63-64	<b>0.125</b>	<b>0.199</b>		<b>0.0745</b>	<b>0.0837</b>	
Post-ACA	<b>0.0192***</b> (0.0047)	<b>0.103***</b> (0.0114)		<b>0.0558***</b> (0.0055)	<b>0.0110**</b> (0.0038)	
Expanded			<b>-0.0278</b> (0.0152)			<b>0.0217</b> (0.0148)
Post-ACA*Expanded			<b>0.0823***</b> (0.0122)			<b>-0.0453***</b> (0.0066)
139%-400% FPL:						
Mean, Age 63-64	<b>0.0249</b>	<b>0.0441</b>		<b>0.0941</b>	<b>0.110</b>	
Post-ACA	<b>0.00772***</b> (0.0018)	<b>0.0429***</b> (0.0061)		<b>0.0697***</b> (0.0061)	<b>0.0404***</b> (0.0031)	
Expanded			<b>-0.0114</b> (0.0114)			<b>0.00891</b> (0.0109)
Post-ACA*Expanded			<b>0.0353***</b> (0.0062)			<b>-0.0292***</b> (0.0068)

Standard errors in parentheses. Controls include gender, marital status, employment status, education level and race.  
I also include state level fixed effects and cluster by state.

Source: ACS 2009-2015

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Appendix A: Supplemental Figures and Tables

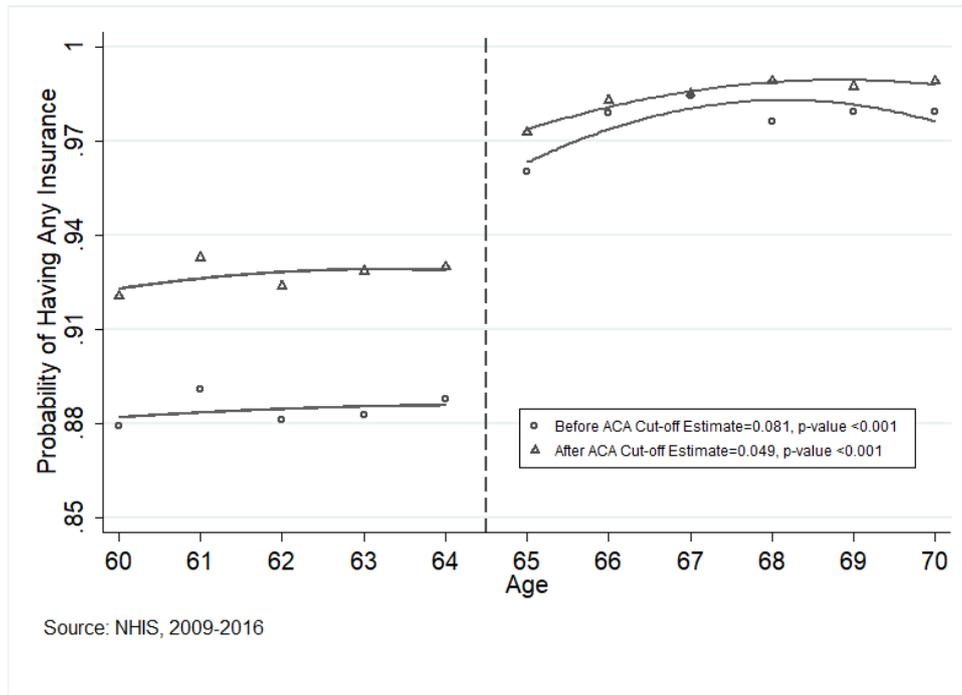
**Table A1:** Private Market Estimated Discontinuities at Age 65 Threshold

	>100% & <138% FPL		<100% FPL	
	Non-Expansion State	Expansion State	Non-Expansion State	Expansion State
<b>2009</b>	<b>-0.153</b> (0.0047)	<b>-0.0776</b> (0.0022)	<b>-0.0389</b> (0.0027)	<b>-0.0737</b> (0.0017)
<b>2010</b>	<b>-0.101</b> (0.0012)	<b>-0.108</b> (0.0020)	<b>-0.0624</b> (0.0012)	<b>-0.0744</b> (0.0026)
<b>2011</b>	<b>-0.0437</b> (0.0022)	<b>-0.0508</b> (0.0034)	<b>-0.0562</b> (0.0031)	<b>-0.0476</b> (0.0004)
<b>2012</b>	<b>-0.0652</b> (0.0020)	<b>-0.0729</b> (0.0020)	<b>-0.0655</b> (0.0019)	<b>-0.0763</b> (0.0015)
<b>2013</b>	<b>-0.0457</b> (0.0016)	<b>-0.0870</b> (0.0026)	<b>-0.0663</b> (0.0039)	<b>-0.0645</b> (0.0034)
<b>2014</b>	<b>-0.104</b> (0.0072)	<b>-0.0587</b> (0.0033)	<b>-0.0732</b> (0.0041)	<b>-0.0490</b> (0.0012)
<b>2015</b>	<b>-0.106</b> (0.0019)	<b>-0.115</b> (0.0030)	<b>-0.0539</b> (0.0068)	<b>-0.0653</b> (0.0025)
<b>2016</b>	<b>-0.137</b> (0.0022)	<b>-0.102</b> (0.0008)	<b>-0.124</b> (0.0012)	<b>-0.0879</b> (0.0026)

Standard errors in parentheses

Source: ACS 2009-2016

**Figure A1:** Probability of Being Insured at Age 65 Cutoff, Before vs After the ACA.  
Source: NHIS, 2009-2016



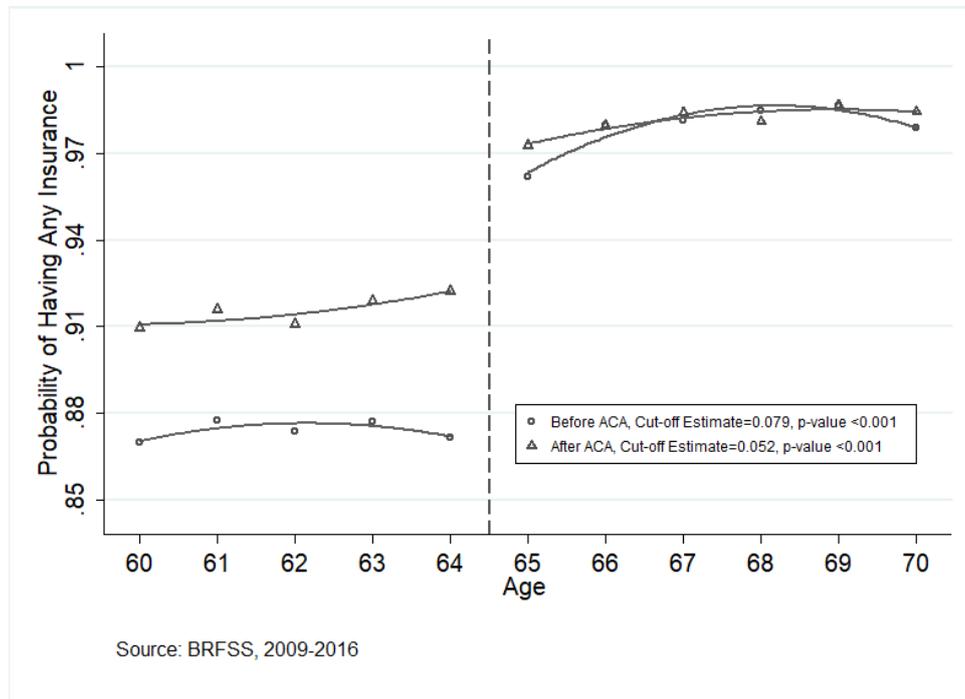
**Table A2:** Estimated Discontinuities at Age 65 Threshold for Low Income Adults-ESI and Medicaid

	Employer Sponsored		Medicaid	
	Non-Expansion State	Expansion State	Non-Expansion State	Expansion State
<i>&lt;139% FPL</i>				
<b>2009</b>	<b>-0.116</b> (0.0016)	<b>-0.124</b> (0.0026)	<b>-0.117</b> (0.0004)	<b>-0.166</b> (0.0025)
<b>2010</b>	<b>-0.0993</b> (0.0022)	<b>-0.0825</b> (0.0021)	<b>-0.109</b> (0.0022)	<b>-0.169</b> (0.0017)
<b>2011</b>	<b>-0.0735</b> (0.0043)	<b>-0.0826</b> (0.0020)	<b>-0.0992</b> (0.0004)	<b>-0.157</b> (0.0021)
<b>2012</b>	<b>-0.103</b> (0.0036)	<b>-0.0968</b> (0.0019)	<b>-0.117</b> (0.0017)	<b>-0.164</b> (0.0012)
<b>2013</b>	<b>-0.112</b> (0.0023)	<b>-0.121</b> (0.0013)	<b>-0.0591</b> (0.0010)	<b>-0.149</b> (0.0023)
<b>2014</b>	<b>-0.0852</b> (0.0017)	<b>-0.0880</b> (0.0010)	<b>-0.104</b> (0.0006)	<b>-0.235</b> (0.0031)
<b>2015</b>	<b>-0.107</b> (0.0015)	<b>-0.0531</b> (0.0032)	<b>-0.137</b> (0.0019)	<b>-0.244</b> (0.0012)
<b>2016</b>	<b>-0.0672</b> (0.0010)	<b>-0.0874</b> (0.0046)	<b>-0.186</b> (0.0009)	<b>-0.293</b> (0.0021)
<i>&lt;100% FPL</i>				
<b>2009</b>	<b>-0.120</b> (0.0013)	<b>-0.117</b> (0.0037)	<b>-0.114</b> (0.0018)	<b>-0.199</b> (0.0037)
<b>2010</b>	<b>-0.0899</b> (0.0016)	<b>-0.0661</b> (0.0044)	<b>-0.137</b> (0.0022)	<b>-0.201</b> (0.0036)
<b>2011</b>	<b>-0.0676</b> (0.0069)	<b>-0.0884</b> (0.0024)	<b>-0.137</b> (0.0015)	<b>-0.197</b> (0.0030)
<b>2012</b>	<b>-0.124</b> (0.0031)	<b>-0.121</b> (0.0014)	<b>-0.137</b> (0.0014)	<b>-0.212</b> (0.0012)
<b>2013</b>	<b>-0.0989</b> (0.0027)	<b>-0.119</b> (0.0015)	<b>-0.0829</b> (0.0016)	<b>-0.158</b> (0.0043)
<b>2014</b>	<b>-0.0837</b> (0.0031)	<b>-0.102</b> (0.0018)	<b>-0.105</b> (0.0030)	<b>-0.245</b> (0.0014)
<b>2015</b>	<b>-0.0834</b> (0.0027)	<b>-0.0435</b> (0.0044)	<b>-0.170</b> (0.0038)	<b>-0.247</b> (0.0010)
<b>2016</b>	<b>-0.0715</b> (0.0039)	<b>-0.101</b> (0.0060)	<b>-0.200</b> (0.0021)	<b>-0.305</b> (0.0027)

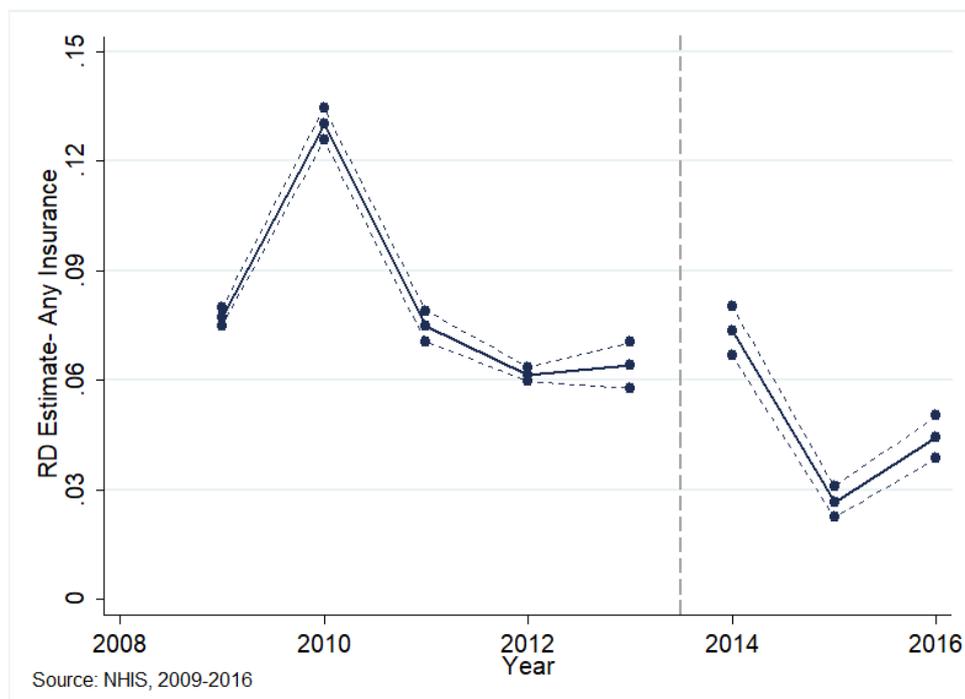
Standard errors in parentheses

Source: ACS 2009-2016

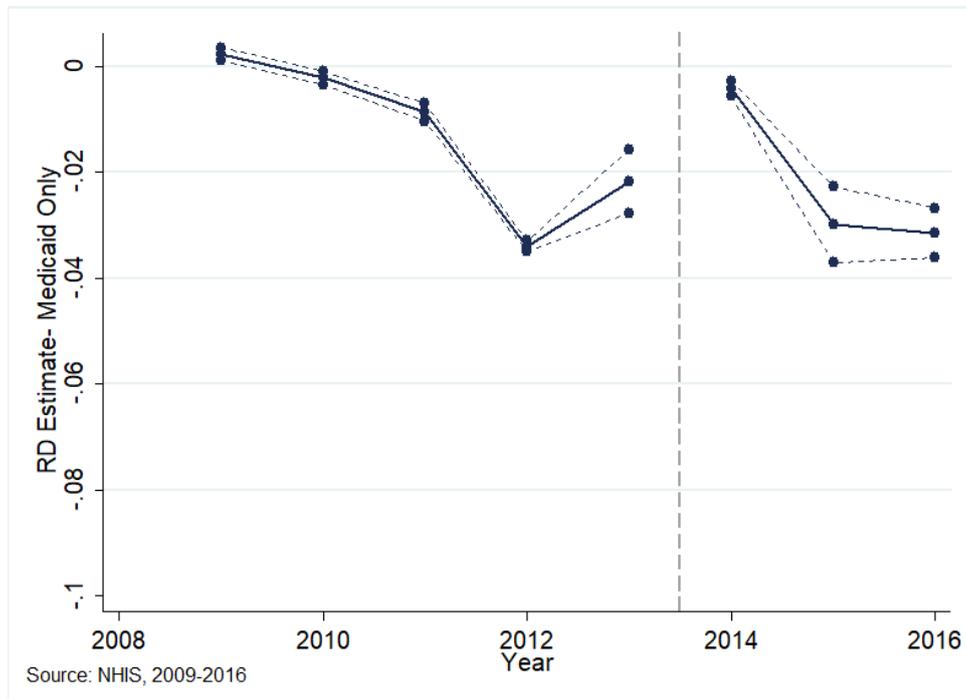
**Figure A2:** Probability of Being Insured at Age 65 Cutoff, Before vs After the ACA.  
 Source: BRFSS, 2009-2016



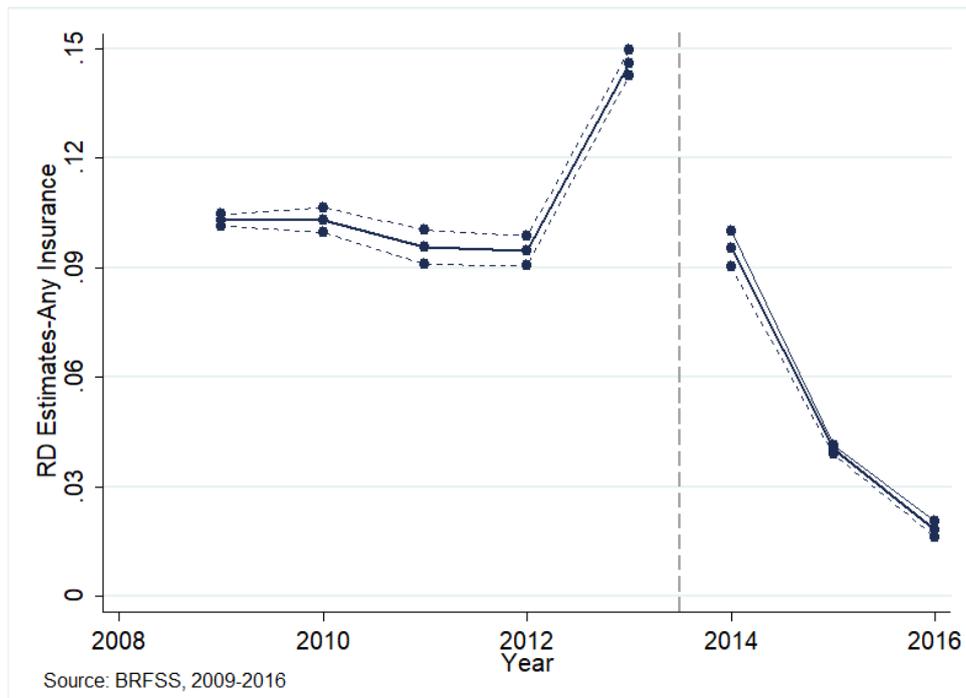
**Figure A3:** Estimates of the Effect of the ACA on Having Insurance at the Age 65 Discontinuity  
 Source: NHIS 2009-2016



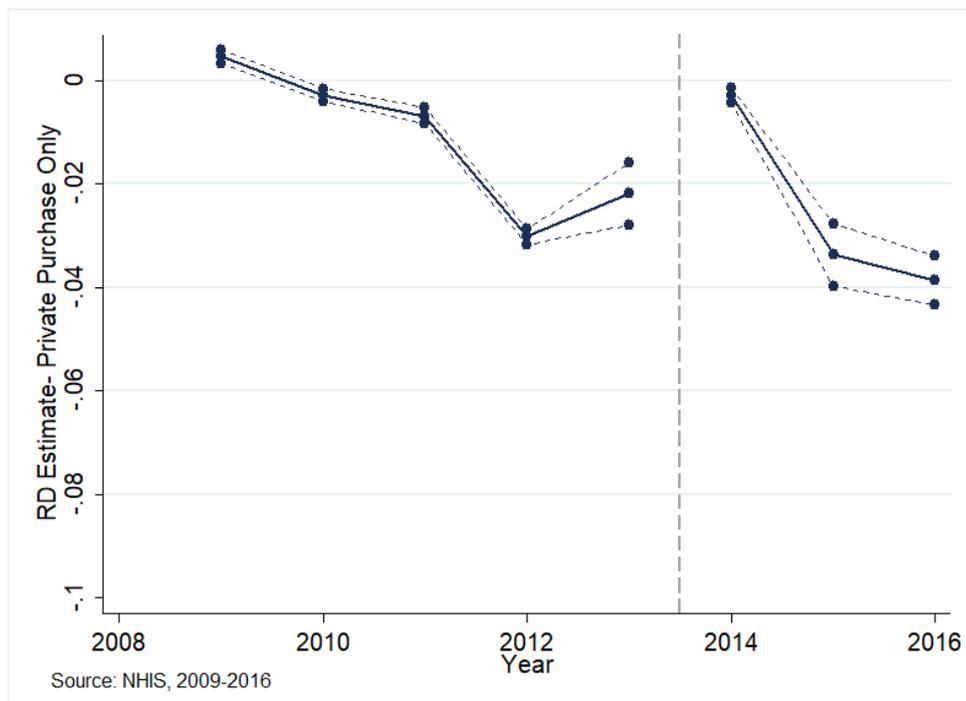
**Figure A4:** Estimates of the Effect of the ACA on Age 65 Discontinuity-Medicaid  
 Source: NHIS, 2009-2016



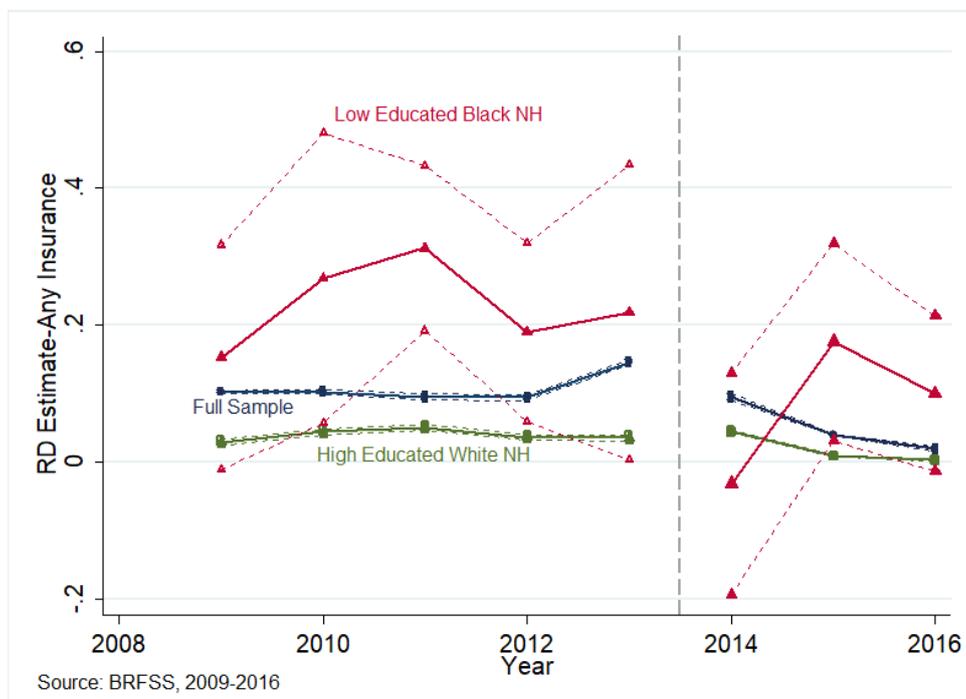
**Figure A5:** Estimates of the Effect of the ACA on Having Insurance at the Age 65 Discontinuity  
 Source: BRFSS 2009-2016



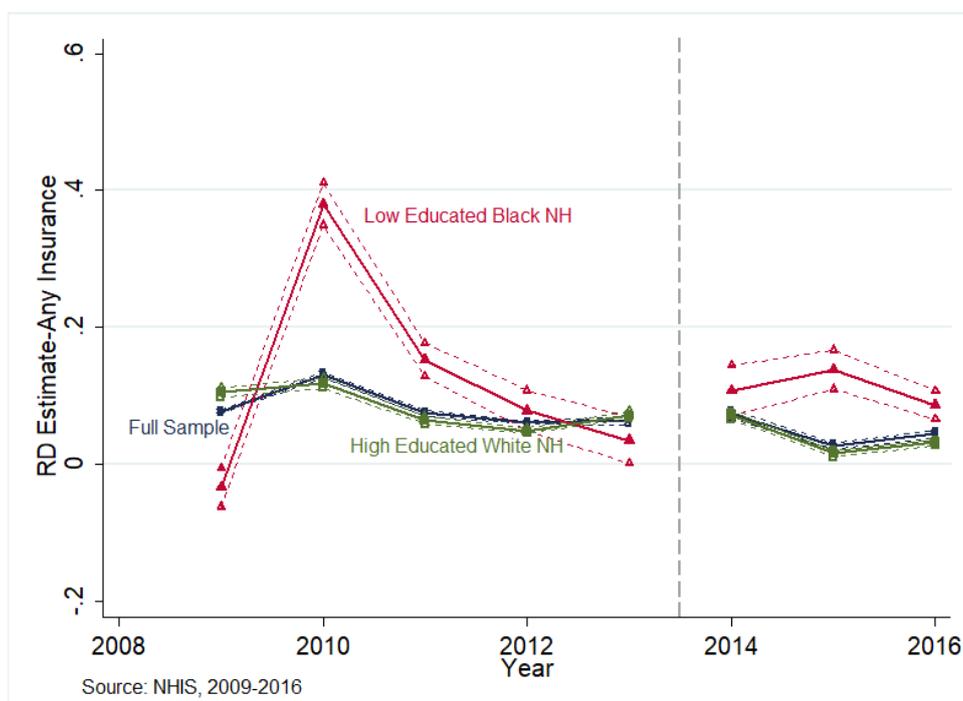
**Figure A6:** Estimates of the Effect of the ACA on Age 65 Discontinuity-Medicaid  
 Source: NHIS, 2009-2016



**Figure A7:** RD Estimates by Ethnicity and Education Type: BRFSS, 2009-2016



**Figure A8:** RD Estimates by Ethnicity and Education Type  
 Source: NHIS, 2009-2016



**Table A3:** Change in Estimated Discontinuities at Age 65 Due to ACA-Source: NHIS, 2009-2016

	Any Insurance		Medicare		Medicaid		Private		Employer Sponsored		Two or More		Other	
	Mean Age 63-64	Estimate at Age 65	Mean Age 63-64	Estimate at Age 65	Mean Age 63-64	Estimate at Age 65	Mean Age 63-64	Estimate at Age 65	Mean Age 63-64	Estimate at Age 65	Mean Age 63-64	Estimate at Age 65	Mean Age 63-64	Estimate at Age 65
<i>Full Sample</i>														
Post-ACA*Post-Age65	<b>0.901</b>	<b>-0.0318</b> (0.000)	<b>0.0618</b>	<b>0.0164</b> (0.002)	<b>0.0380</b>	<b>-0.00524</b> (0.000)	<b>0.187</b>	<b>-0.0561</b> (0.001)	<b>0.376</b>	<b>0.0447</b> (0.001)	<b>0.135</b>	<b>-0.0418</b> (0.001)	<b>0.0903</b>	<b>0.0102</b> (0.001)
<i>Female</i>														
Post-ACA*Post-Age65	<b>0.896</b>	<b>-0.0465</b> (0.002)	<b>0.0611</b>	<b>0.0726</b> (0.002)	<b>0.0426</b>	<b>-0.00409</b> (0.001)	<b>0.209</b>	<b>-0.0476</b> (0.001)	<b>0.369</b>	<b>0.0591</b> (0.002)	<b>0.129</b>	<b>-0.111</b> (0.001)	<b>0.072</b>	<b>-0.0111</b> (0.001)
<i>By Ethnicity</i>														
White Non-Hispanic Post-ACA*Post-Age65	<b>0.905</b>	<b>-0.0390</b> (0.000)	<b>0.0557</b>	<b>-0.00189</b> (0.001)	<b>0.0302</b>	<b>0.0051</b> (0.000)	<b>0.196</b>	<b>-0.0570</b> (0.001)	<b>0.391</b>	<b>0.0215</b> (0.002)	<b>0.133</b>	<b>-0.0346</b> (0.002)	<b>0.0876</b>	<b>0.0263</b> (0.001)
Black Non-Hispanic Post-ACA*Post-Age65	<b>0.881</b>	<b>0.000279</b> (0.004)	<b>0.112</b>	<b>0.151</b> (0.005)	<b>0.0868</b>	<b>-0.0440</b> (0.002)	<b>0.133</b>	<b>0.0284</b> (0.002)	<b>0.280</b>	<b>0.0288</b> (0.004)	<b>0.163</b>	<b>-0.0277</b> (0.005)	<b>0.0930</b>	<b>-0.113</b> (0.003)
Other Post-ACA*Post-Age65	<b>0.867</b>	<b>0.00806</b> (0.006)	<b>0.0633</b>	<b>0.0457</b> (0.017)	<b>0.0697</b>	<b>-0.0631</b> (0.005)	<b>0.159</b>	<b>-0.236</b> (0.003)	<b>0.326</b>	<b>0.332</b> (0.002)	<b>0.104</b>	<b>-0.103</b> (0.004)	<b>0.128</b>	<b>0.00983</b> (0.007)
<i>By Education Level</i>														
Less Than High School Diploma <b>Post-ACA*Post-Age65</b>	<b>0.789</b>	<b>0.00592</b> (0.008)	<b>0.132</b>	<b>0.0629</b> (0.013)	<b>0.126</b>	<b>0.00691</b> (0.003)	<b>0.108</b>	<b>-0.0353</b> (0.006)	<b>0.183</b>	<b>-0.0327</b> (0.002)	<b>0.158</b>	<b>0.0428</b> (0.005)	<b>0.0958</b>	<b>0.0348</b> (0.003)
High School Diploma or GED Post-ACA*Post-Age65	<b>0.888</b>	<b>-0.0745</b> (0.003)	<b>0.0718</b>	<b>-0.0897</b> (0.002)	<b>0.0355</b>	<b>-0.00449</b> (0.001)	<b>0.184</b>	<b>-0.0796</b> (0.001)	<b>0.374</b>	<b>0.156</b> (0.005)	<b>0.125</b>	<b>-0.0969</b> (0.003)	<b>0.0839</b>	<b>-0.0471</b> (0.001)
Some College Post-ACA*Post-Age65	<b>0.909</b>	<b>-0.0140</b> (0.003)	<b>0.0567</b>	<b>-0.123</b> (0.016)	<b>0.0253</b>	<b>0.00775</b> (0.002)	<b>0.197</b>	<b>0.0432</b> (0.002)	<b>0.376</b>	<b>0.0893</b> (0.003)	<b>0.150</b>	<b>-0.0345</b> (0.002)	<b>0.0965</b>	<b>-0.00854</b> (0.001)
College Degree or Higher Post-ACA*Post-Age65	<b>0.954</b>	<b>-0.00763</b> (0.001)	<b>0.0302</b>	<b>0.199</b> (0.002)	<b>0.0135</b>	<b>-0.0276</b> (0.000)	<b>0.217</b>	<b>-0.113</b> (0.002)	<b>0.465</b>	<b>-0.0254</b> (0.002)	<b>0.117</b>	<b>-0.0512</b> (0.002)	<b>0.0871</b>	<b>0.0557</b> (0.001)
<i>By Ethnicity and Education Level</i>														
Whites w/College Degree or Higher Post-ACA*Post-Age65	<b>0.956</b>	<b>-0.0188</b> (0.001)	<b>0.0276</b>	<b>0.190</b> (0.003)	<b>0.0117</b>	<b>-0.0277</b> (0.001)	<b>0.220</b>	<b>-0.0942</b> (0.002)	<b>0.472</b>	<b>-0.0589</b> (0.003)	<b>0.117</b>	<b>-0.0370</b> (0.003)	<b>0.0849</b>	<b>0.0736</b> (0.001)
Blacks w/Less Than High School Diploma Post-ACA*Post-Age65	<b>0.824</b>	<b>0.0517</b> (0.018)	<b>0.172</b>	<b>0.553</b> (0.021)	<b>0.192</b>	<b>-0.183</b> (0.016)	<b>0.0915</b>	<b>0.103</b> (0.016)	<b>0.163</b>	<b>-0.301</b> (0.025)	<b>0.187</b>	<b>0.0559</b> (0.030)	<b>0.0566</b>	<b>0.0596</b> (0.006)

Source: NHIS, 2009-2016. Standard errors in parentheses and clustered by age.

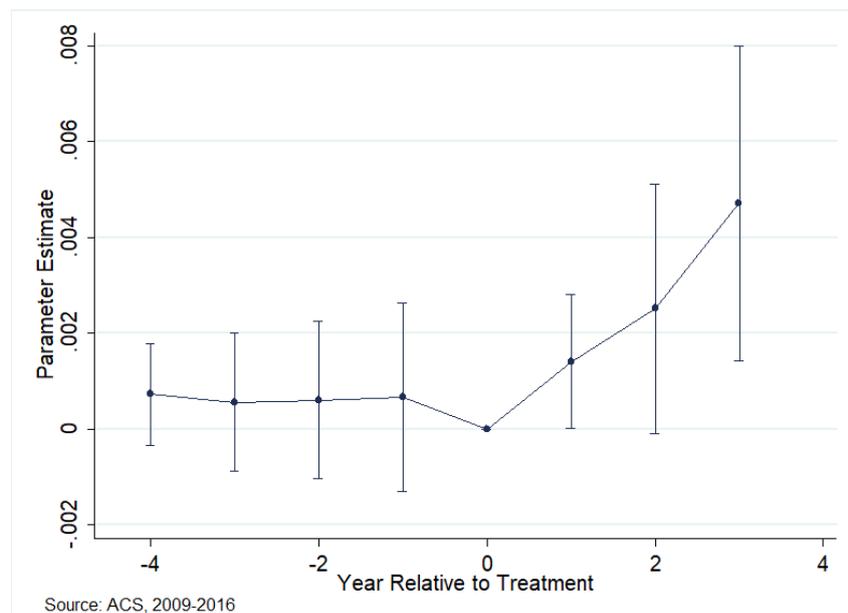
\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Appendix B: Tests for Research Design Validity

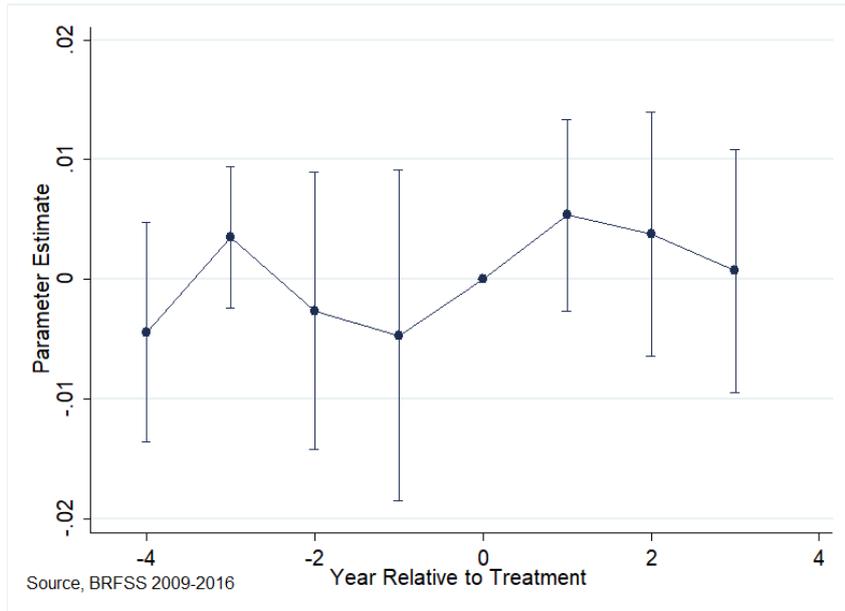
### Test for Parallel Trends

I use pre-ACA trends in insurance rates for those over the age of 65 in an event study format to test for equality of parallel trends. Counting 2013 as the reference year, I interact treatment dummies with year dummies, regress the dependent variable (insured) on the  $treatment*year$  dummies and a full set of controls. I then test that coefficients on the  $treatment*year$  for variables in pre-treatment years (2009-2013) are statistically equal to zero.

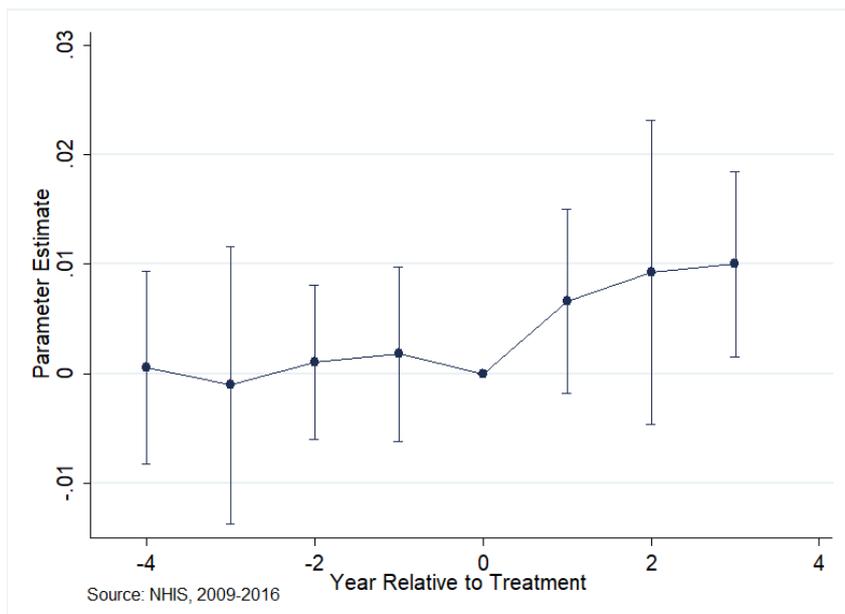
The coefficients from each data source are graphed in Figures B1, B2, and B3. When testing the elderly population's pre-ACA insurance trends for equality using each data source, I find no evidence the pre-ACA trends for the control group compared to the treatment group are not equal. Results from all three tests (ACS p-value=0.55, NHIS p-value=0.8685, BRFSS p-value=0.9344) show that the key assumption of the DD study is satisfied.



**Figure B1:** Event Study Test for Parallel Trends (p=0.55), ACS 2009-2015



**Figure B2:** Event Study Test for Parallel Trends ( $p=0.9344$ ), BRFSS, 2009-2016



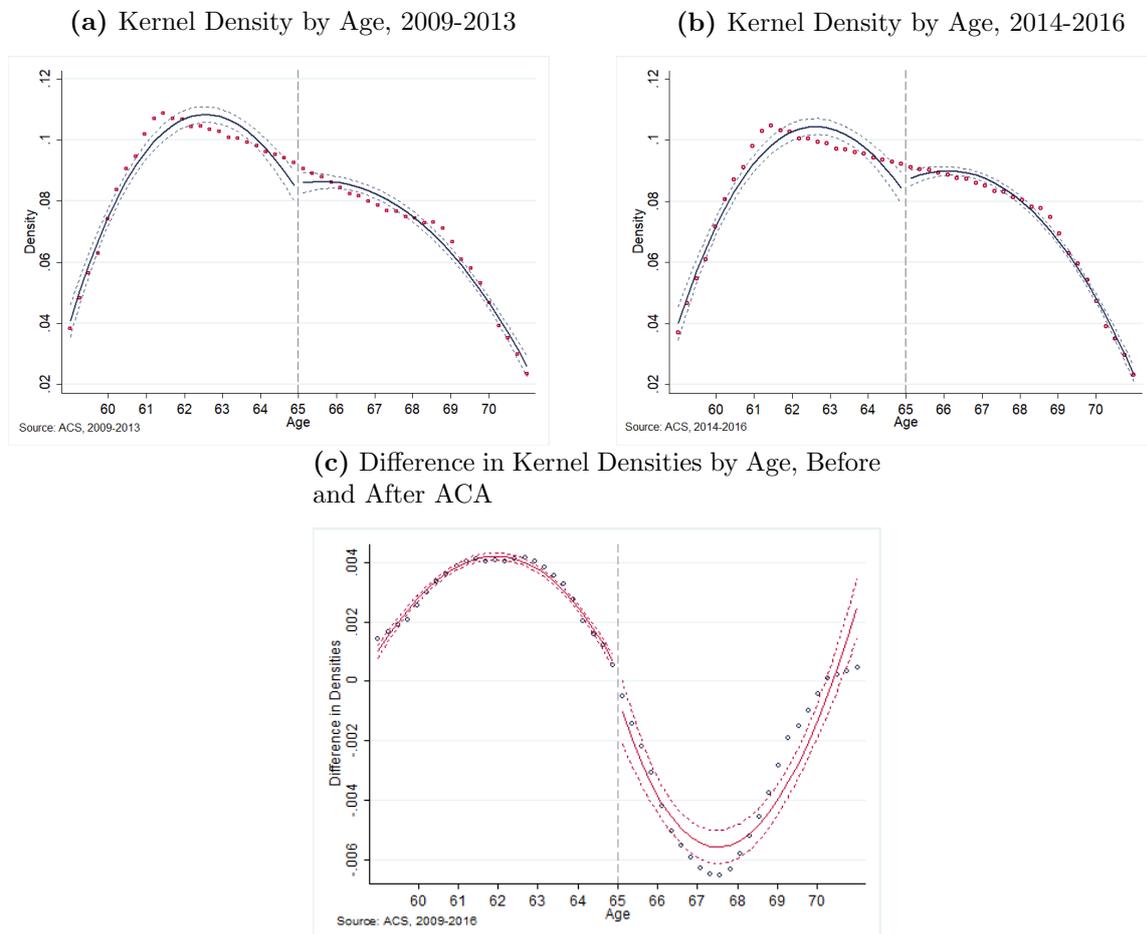
**Figure B3:** Event Study Test for Parallel Trends ( $p=0.8685$ ), NHIS 2009-2016)

### Manipulation of the Running Variable

I test for manipulation of the running variable by following standard literature (McCrary, 2008) modified for the embedded difference-in-difference in the research design (Grembi et al., 2012). For a simple regression discontinuity, I plot the kernel density by running variable (age) to

show no sudden jumps in density at the cutoff age. For a difference-in- regression discontinuity design, the test for manipulation of the running variable requires showing the *difference in densities* between the control (before ACA) and treatment (after ACA ) groups do not abruptly change at the cutoff age. I plot the kernel density by age for the control and treatment groups separately in Figures B4a and B4b. I then show the smoothness of the difference in control vs treatment group densities by age in B4c to conclude there is no manipulation of the running variable, satisfying the test for design validity.

**Figure B4:** Density Test for Manipulation of the Running Variable  
Source: ACS, 2009-2016



## Covariate Smoothness

**Table B1:** Covariate Balance Test for RD and RD-DD Specification

	BRFSS				NHIS				ACS			
	RD		RD-DD		RD		RD-DD		RD		RD-DD	
	Linear	Quadratic	Linear	Quadratic	Linear	Quadratic	Linear	Quadratic	Linear	Quadratic	Linear	Quadratic
Female	-0.00634 (0.004)	0.00551 (0.004)	-0.000699 (0.011)	0.0239 (0.012)	0.0194* (0.006)	0.0116 (0.006)	-0.00497 (0.019)	-0.0506** (0.014)	0.00397 (0.003)	0.0177* (0.007)	-0.00341 (0.009)	-0.000693 (0.014)
Married	-0.00894* (0.004)	-0.00596 (0.006)	0.00327 (0.016)	0.0402* (0.013)	-0.0105* (0.004)	-0.0150* (0.006)	0.0192 (0.014)	-0.0161 (0.018)	-0.00668* (0.002)	-0.0105** (0.003)	0.00410 (0.006)	-0.00434 (0.014)
Employed	0.0172*** (0.004)	0.0163** (0.005)	-0.0147* (0.005)	-0.00749 (0.008)	-0.0229* (0.009)	0.0130 (0.006)	-0.0305 (0.005)	0.00480 (0.007)	-0.0244* (0.009)	-0.0150 (0.014)	-0.00631 (0.005)	0.00695 (0.004)
White NH	-0.0299*** (0.006)	-0.0222 (0.016)	-0.0149 (0.016)	-0.0426* (0.016)	-0.00382 (0.005)	0.00625* (0.002)	-0.00608 (0.007)	-0.00538 (0.006)	0.00287 (0.003)	0.00370 (0.003)	0.00168 (0.003)	0.00185 (0.001)
Black NH	0.00749 (0.005)	-0.00330 (0.005)	0.0173** (0.005)	0.00981 (0.006)	0.00270 (0.004)	-0.00610 (0.003)	-0.00633 (0.005)	-0.000325 (0.007)	-0.00226 (0.002)	-0.000689 (0.001)	-0.00342 (0.003)	0.000558 (0.004)
Other	0.0224** (0.007)	0.0255 (0.015)	-0.00244 (0.019)	0.0328 (0.018)	0.00111 (0.002)	-0.000147 (0.002)	0.0124 (0.006)	0.00571 (0.003)	-0.000602 (0.002)	-0.00302 (0.001)	0.00174 (0.003)	-0.00240 (0.003)
Less Than HS Diploma	0.00231 (0.003)	-0.00176 (0.006)	-0.0183 (0.015)	0.00566 (0.017)	-0.0112** (0.003)	-0.00603 (0.004)	0.00710 (0.005)	0.0196 (0.010)	0.00169 (0.004)	-0.00351** (0.001)	-0.00891* (0.003)	-0.00647** (0.002)
HS Diploma or GED	0.00376 (0.008)	-0.0106 (0.008)	-0.00380 (0.006)	0.00121 (0.010)	0.00903 (0.006)	0.0245*** (0.005)	0.00455 (0.012)	0.0123 (0.011)	0.00830** (0.003)	0.000463 (0.004)	-0.0108 (0.007)	-0.0178 (0.012)
Some College	-0.00816 (0.005)	0.00472 (0.008)	-0.0194 (0.017)	-0.00349 (0.019)	-0.0175*** (0.004)	-0.0110*** (0.002)	0.00536 (0.020)	-0.000841 (0.023)	-0.00799** (0.002)	-0.00627 (0.005)	0.0217** (0.006)	0.0472** (0.013)
College Degree or More	0.00210 (0.006)	0.00768 (0.009)	0.0416* (0.016)	-0.00338 (0.008)	0.0197 (0.009)	-0.00745 (0.009)	-0.0170 (0.015)	-0.0311 (0.019)	-0.00199 (0.006)	0.00932** (0.002)	-0.00199 (0.008)	-0.0229** (0.007)
N	310356	310356	310356	310356	81193	81193	81193	81193	2844857	2844857	2844857	2844857
$r^2$	0.0429	0.0429	0.0386	0.0386	0.0422	0.0424	0.0421	0.0423	0.0429	0.0429	0.0429	0.0430

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Appendix C: Falsification and Sensitivity Tests

### Robustness to Varying Age Ranges Across Age Threshold

**Table C1: Robustness to Varying Ranges Around Threshold**

	Age 60-70	Age 61-69	Age 62-68	Age 63-67
Panel A: ACS, 2009-2015				
Post-Age65	<b>0.0854</b> (0.003)	<b>0.0790</b> (0.001)	<b>0.0786</b> (0.000)	<b>0.0847</b> (0.000)
N	2844857	2331219	1827663	1308714
$r^2$	0.0731	0.0715	0.0711	0.0702
Post-ACA*Post-Age65				
	<b>-0.0321</b> (0.002)	<b>-0.0301</b> (0.003)	<b>-0.0205</b> (0.001)	<b>-0.0284</b> (0.001)
N	2844857	2331219	1827663	1308714
$r^2$	0.0756	0.0739	0.0733	0.0724
Panel B: BRFSS, 2009-2016				
Post-Age65	<b>0.0672</b> (0.003)	<b>0.0698</b> (0.002)	<b>0.0744</b> (0.002)	<b>0.0783</b> (0.002)
N	310684	247260	192027	134009
$r^2$	0.120	0.114	0.110	0.103
Post-ACA*Post-Age65				
	<b>-0.0279</b> (0.008)	<b>-0.0173</b> (0.010)	<b>-0.0498</b> (0.004)	<b>-0.0538</b> (0.001)
N	310684	247260	192027	134009
$r^2$	0.125	0.119	0.115	0.107
Panel C: NHIS, 2009-2016				
Post-Age65	<b>0.0671</b> (0.007)	<b>0.0501</b> (0.003)	<b>0.0567</b> (0.000)	<b>0.0699</b> (0.000)
N	80589	65735	51759	36978
$r^2$	0.0588	0.0581	0.0578	0.0561
Post-ACA*Post-Age65				
	<b>-0.0256</b> (0.003)	<b>-0.0235</b> (0.003)	<b>-0.0156</b> (0.001)	<b>-0.0318</b> (0.000)
N	80589	65735	51759	36978
$r^2$	0.0627	0.0621	0.0616	0.0598

Standard errors in parentheses and clustered by age.

### Flexible Definitions for State Expansions

There were several states that allowed for modified expansions, either because there were existing provisions for low-income families or states chose a scaled down Medicaid expansion. Though most states expanded Medicaid in January 2014, there were some states that expanded Medicaid later in 2014 or in 2015. Using the Medicaid expansion categories defined in Table A1 in Simon et al. (2017), I test whether my results are sensitive to these Medicaid expansion variations. Simon, et al. separates states into four different categories—full expansion, substantial expansion, mild expansion, and non-expansion.<sup>7</sup> In the main paper, I follow this convention in defining expansion states as all states except those that chose against any form of expansion. In this section, I also follow Simon in varying the definition of expansion states to ensure my results still hold.

<sup>7</sup>The reference paper contains detailed information on each state's expansion

**Full Expansion States:** Alaska, Arizona, Arkansas, Colorado, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, New Hampshire, New Jersey, North Dakota, New Mexico, Nevada, Ohio, Oregon, Pennsylvania, Rhode Island, Washington, and West Virginia

**Substantial Expansion States:** California, Connecticut, Hawaii, Minnesota, Wisconsin

**Mild Expansion States:** Delaware, District of Columbia, Massachusetts, New York, Vermont

**Non-Expansion States:** Alabama, Florida, Georgia, Idaho, Kansas, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, North Carolina, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wyoming

**Table C2:** Changes in Medicaid and Private Insurance Uptake by Medicaid Expansion Status

	(1) Medicaid Non-Expansion State	(2) Medicaid Expansion State	(3) Medicaid Full Sample	(4) Private Non-Expansion State	(5) Private Expansion State	(6) Private Full Sample
<b>Full and Substantial Expansions Only</b>						
Mean, Age 63-64	<b>0.0344</b>	<b>0.0470</b>		<b>0.0916</b>	<b>0.0948</b>	
Post-ACA	<b>0.0066*</b> (0.0005)	<b>0.0338</b> (0.0041)		<b>0.0414</b> (0.0036)	<b>0.023</b> (0.0042)	
MedicaidExpansion			<b>0.0230</b> (0.0018)			<b>-0.02931</b> (0.0086)
Post-ACA*MedicaidExpansion			<b>0.0266</b> (0.0037)			<b>-0.0177*</b> (0.0008)
<b>Full Expansion Only:</b>						
Mean, Age 63-64	<b>0.0344</b>	<b>0.0370</b>		<b>0.0916</b>	<b>0.0994</b>	
Post-ACA	<b>0.00666*</b> (0.0005)	<b>0.0294*</b> (0.0008)		<b>0.0415</b> (0.0036)	<b>0.0269</b> (0.0042)	
MedicaidExpansion			<b>0.0236</b> (0.0021)			<b>-0.0292</b> (0.0087)
Post-ACA*MedicaidExpansion			<b>0.0226*</b> (0.0004)			<b>-0.0146*</b> (0.0007)

Standard errors in parentheses..Controls include gender, marital status, employment status, education level and race.

I also include state level fixed effects and cluster by state.

Source: ACS 2009-2015

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$