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The Effect of Health Insurance Expansions on Insurance Status, Access to Care, and Labor Market Participation

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The Effect of Health Insurance Expansions on Insurance Status, Access to Care, and Labor Market Participation

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M.P.H., Emory University, 2006

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An abstract of
A dissertation submitted to the Faculty of the
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Abstract

The Effect of Health Insurance Expansions on Insurance Status, Access to Care, and Labor Market Participation

By Gery P. Guy Jr.

Low-income childless adults are among the most likely group in the United States to be without health insurance coverage, accounting for over half of the non-elderly uninsured. One reason for these high rates of uninsurance is their historical exclusion from public health insurance programs. However, in recent years, policy changes provided states with more opportunities to expand health insurance coverage to this population. This dissertation is comprised of three articles investigating the effect of these health insurance expansion efforts on health insurance status, access to care, and labor market participation.

The first chapter analyzed the impact of public health insurance expansions and the use of enrollee cost-sharing on insurance status and receipt of preventive screenings and physician services. The results show that childless adult expansions, regardless of cost-sharing levels, reduced uninsurance rates and decreased the likelihood that costs prohibited a physician visit. However, cost-sharing played an important role in the utilization of preventive services. Expansions with traditional cost-sharing levels led to increases in preventive service utilization, while those with increased cost-sharing requirements did not increase preventive service use.

The second chapter examined the effects of public and private health insurance premiums on insurance status. The results show that reduced public premiums are associated with an increased probability of public health insurance and a decreased probability of private health insurance and uninsurance. Additionally, reduced private premiums increased the probability of private insurance and decreased the probability of uninsurance. Using the regression results, the effects of the premium levels included in the Patient Protection and Affordable Care Act (PPACA) were simulated. Among states with current programs, PPACA would provide health insurance coverage to an additional 507,605 uninsured childless adults.

The third chapter examined the effect of expanding public health insurance on labor force participation. Specifically, the effect of the expansions on leaving work, full-time employment, and part-time employment were examined. The analysis finds no effect of public health insurance eligibility on the likelihood of leaving work and full-time employment. However, the results show that the public health insurance eligibility resulted in a 4.1 percentage point increased likelihood of part-time employment.

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CHAPTER 1

The Effects of Cost Sharing on Access to Care among Childless Adults

Abstract

This study analyzes the impact of public health insurance expansions and the use of enrollee cost-sharing on insurance status and receipt of clinically indicated preventive screenings and physician services. This study uses Behavioral Risk Factor Surveillance System (BRFSS) data from 1997-2007. This study employs multivariate difference-in-difference logistic regression modeling of pooled cross-sectional time series data. The effect of the expansions on insurance status and access to care is identified by cross-state variation in program implementation, as well as cross-state and within-state variation in program eligibility criteria over time**.** Childless adult expansions, regardless of cost-sharing levels, reduced uninsurance rates and decreased the likelihood that childless adults needed to see a physician but did not because of cost. Expansions with traditional public insurance cost-sharing requirements increased the use of preventive screenings, while expansions with increased cost-sharing requirements did not. Cost-sharing requirements did not have an impact on the ability to see a physician when needed, but played an important role in the utilization of preventive services. Expanding public health insurance to low-income childless adults presents a promising policy opportunity, but there are trade-offs between the efficiencies obtained through increased cost-sharing and the potential inefficiencies due to the lower use of preventive services.

NOTE: A version of this paper was published in 2010. See: Guy Jr., G. (2010). The Effects of Cost Sharing on Access to Care among Childless Adults. *Health Services Research*. Published Online September 1, 2010.

Introduction

Health insurance is an important enabling factor in providing access to physician services and preventive care. Many low-income individuals rely on public insurance programs as an important source of coverage. However, such coverage is generally limited to children, their parents, pregnant women, and the disabled; thus leaving many adults without children ineligible for public coverage regardless of their income. In 2007, 46 percent of childless adults with incomes below the federal poverty level and 37 percent of those between one and two times the federal poverty level were without health insurance coverage (Hoffman et al., 2008). Lack of health insurance results in worse health outcomes, as the uninsured receive less preventive care, are diagnosed at more advanced disease stages, receive less comprehensive care and have higher mortality rates (Coleman et al., 2002).

In recent years, changes in federal policy provided states with more opportunities to expand public insurance coverage to adults. States could expand coverage to adults through 1115 waivers and Health Insurance Flexibility and Accountability (HIFA) waivers (Coughlin et al., 2006). These waivers allowed states to test and evaluate innovative health insurance approaches. Additionally, states can pursue expansions without a federal Medicaid waiver if they bear the full cost of the expansions. Given the flexibility states have in increasing cost-sharing through premiums, co-payments, and deductibles, a number of states have enacted adult programs with leaner benefit packages, requiring significantly more cost-sharing than the state's Medicaid program. Findings from the RAND Health Insurance Experiment show that enrollee cost-sharing reduced the use of both highly effective and less effective health services, with generally no adverse effects on health status except those at high risk, particularly among the low-income (Newhouse et al., 1993). Cost-sharing requirements could lead to barriers in accessing physician services and preventive health screenings, particularly

among low-income individuals, as they have very limited resources to devote to health care. Thus, it is important to examine how cost-sharing requirements impact insurance coverage and access to care among low income childless adults eligible for public health insurance expansions.

In this paper, data from the Behavioral Risk Factor Surveillance System (BRFSS) from 1997-2007 is used to analyze the impact of state public health insurance expansions on health insurance status and access to care of low-income childless adults. This study not only examines the impact of insurance expansions on uninsurance rates, but goes one step further and examines the impact of these expansions on the receipt of clinically indicated preventive screenings and access to physician services. This paper also provides an analysis of the impact of insurance generosity on access to care by examining the association between cost-sharing levels and access to physician services and preventive screenings. On the eve of health care reform which will expand Medicaid to individuals up to 133 percent of the federal poverty level, including childless adults, this work provides important insights into the effect of public health insurance expansions on the low income childless adult population.

Background

While a number of studies have examined the impact of public health insurance on access to health care, most treat public health insurance as a yes/no dichotomous variable, implicitly assuming that all public coverage provides equal access to care. Several studies show that Medicaid enrollees are more likely than the uninsured to have a usual source of care, a higher number of ambulatory care visits, and higher rates of hospital use (Berk and Schur, 1998; Freeman and Corey, 1993; Long et al., 2005; Marquis and Long, 1996;

Rosenbach, 1989; Wilensky and Berk, 1982). Busch and Duchovny (2005) found that Medicaid expansions to parents led to increased cancer screening rates and reduced the likelihood that parents reported forgoing needed medical care due to costs.

When compared with private coverage, many studies find that Medicaid provides superior coverage for its target population due to the lower cost-sharing requirements. Low-income adults with private coverage tend to face deductibles, co-payments, and limited coverage for some services, all of which may present barriers to access. Rosenbach (1989) found that Medicaid children were more likely to visit an office based physician than children covered under private insurance. Hahn (1994) found that if individuals currently covered through Medicaid were given private coverage, utilization would decrease. Freeman and Corey (1993) demonstrated that low-income non-elderly covered by Medicaid had more ambulatory visits and hospital care than those with private insurance, potentially due to the economic barriers to access imposed by cost-sharing in private insurance.

Evidence from the literature highlights the importance of examining the impact cost-sharing has on access to health care services. The RAND Health Insurance Experiment provides strong evidence that higher cost-sharing leads to a reduction in medical care use, particularly among the low-income. Individuals with a 20 percent coinsurance rate had 25-30 percent less inpatient and ambulatory care than those without cost-sharing requirements (Newhouse et al., 1993). Studies examining the use of preventive services found that higher cost-sharing was associated with lower use of preventive services such as mammograms and Pap tests (Ayanian et al., 2000; Blustein, 1995; Solanki and Schauffler, 1999). Trivedi and co-authors (2008) find that that biennial mammogram screening rates were eight percentage points lower in Medicare cost-sharing plans when compared with plans offering full coverage.

A small number of studies have examined the impact of increased cost-sharing on an enrollee's ability to access care within the public health insurance system. Increased cost-sharing under Oregon's Medicaid program led to higher rates of unmet medical need and disenrollment from the program (Wright et al., 2005). Those disenrolling from the program due to increased cost-sharing reported inferior access to needed care, lower use of primary care, and increased use of emergency rooms compared with those disenrolling for other reasons. Analysis of the effects of new co-payments in Utah's Medicaid program provides mixed results. Early analysis suggested that co-payments did not have an impact on utilization for most services (Williams, 2003). However, a subsequent analysis found that co-payments led to decreased utilization of services such as hospital admissions and physician visits (Ku et al., 2004). These findings highlight the importance of understanding the impact of cost-sharing on access to medical care for the low-income population.

This study adds to the literature by examining the impact of health insurance expansions on insurance status and access to care among childless adults, a population seldomly examined. When examining the effect of insurance expansions it is important to treat insurance as a heterogeneous good, as differences in the type of coverage and required cost-sharing levels are likely to result in differences in utilization (Buchmueller et al., 2005). Unlike many previous studies, this study accounts for the variation in cost-sharing requirements, allowing for an examination of the relationship between these important characteristics of coverage and access to physician services and preventive care.

Methods

Data

The primary source of data for this study is the BRFSS from 1997-2007. The BRFSS is a cross sectional telephone survey of adults designed and funded by the Centers for Disease Control and Prevention (CDC) and conducted at the state level. The advantages of the BRFSS for this analysis are that it contains information on family structure, household income and state identifiers; information necessary for imputing expansion program eligibility. Additionally, the BRFSS includes characteristics likely to affect access to and utilization of health services (e.g. age, education, health status). Previous studies have indicated an inability to control for the presence of chronic illness as a limitation of their study (Coughlin et al., 2005). With the BRFSS, it is possible to control for chronic conditions as respondents are asked if they have been diagnosed with several chronic conditions by a physician. For this analysis the study sample is limited to adults ages 19-64. Individuals age 65 and above and pregnant women are excluded due to their potential eligibility for other public insurance programs.

Data from the Area Resource File (ARF) is used to control for county level enabling/impeding variables, such as provider supply and the availability of a healthcare safety net, as these factors are likely to influence beneficiaries' access to care. Low physician reimbursement rates have affected physician participation rates in the Medicaid program, potentially making it difficult for an enrollee to find a participating provider. (Cohen and Cunningham, 1995; Cunningham and Nichols, 2005; Perloff et al., 1987). To control for Medicaid reimbursement levels, Medicaid-to-Medicare fee ratios by state from the published literature were used (Menges et al., 2001; Norton and Zuckerman, 2000; Zuckerman et al., 2004). When examining the receipt of female cancer screening services, the availability of the state's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) is controlled for, as it provides access to screenings and diagnostic services (Adams et al.,

2003). State level economic data were obtained from the U.S. Bureau of Labor Statistics (BLS) and the U.S. Bureau of Economic Analysis (BEA), and Medicaid managed care data were obtained from the Centers for Medicare and Medicaid Services (CMS).

A variety of access indicators are used as dependent variables in this analysis. Three of the dependent variables are measures of the ability to receive clinically indicated preventive services. These variables are dichotomous variables indicating whether the individual received age appropriate recommended preventive health screenings. These preventive services include a self-reported breast cancer screening with mammography within the past year for women aged 40 to 64 years, a self-reported cervical cancer screening with a Pap test within the past year for women aged 19 to 64 years with an intact uterus, and a self-reported cholesterol screening within the past 5 years for men aged 35 to 64 and women aged 45 to 64. Self-reported screening data has been shown to be highly correlated with medical chart audits (Montano and Phillips, 1995). To examine access to physician services, responses from the following questions are examined: "Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?", and "Do you have one person you think of as your personal doctor or health care provider?" Given the nature of the data being used for this analysis, there are some years in which a dependent variable is unavailable. In such instances, the analysis is carried out only on the available years for a given dependent variable.

Target Population

State programs included in the analysis are identified in Table 1. Table 1 shows considerable variation in eligibility over time and across expansion states. These sources of variation are important in identifying the effect of the expansions. For this analysis two

groups of programs were identified based on cost-sharing requirements: those with traditional public insurance cost-sharing requirements and those with increased cost-sharing requirements. Traditional public insurance cost-sharing programs are defined as those with co-payment requirements similar to the Medicaid program, ranging from $0 to $3 per visit. Increased cost-sharing expansion programs are defined as those with co-payments above the traditional Medicaid level, ranging from $5 to $25. While the classification of cost-sharing programs does not directly take into account the use of premiums, many of the expansion programs with premium requirements also have increased cost-sharing requirements; in fact when attempting to control for programs with premiums the premium variable was found to be collinear with increased cost-sharing. For states that use different levels of cost-sharing by income category, cost-sharing determination is made at the individual level. In models examining the effect of the expansions on having no cost barriers when seeking care and the probability of having a personal doctor, the co-payment for a physician office visit is used to define the level of cost-sharing, while in models examining the receipt of preventive screenings the co-payment for preventive care is used.

Multivariate Analysis

This analysis is based on a standard economic model in which access to and utilization of health care services is a function of individual demographic and social characteristics, individual health status, economic conditions, and health care system characteristics (Andersen and Aday, 1978; Newhouse et al., 1993). Eligibility for childless adult insurance expansions is determined using both income and categorical requirements. Eligible adults must meet categorical requirements (age 19-64, without a child in the household) and have a reported household income below the eligibility threshold. The

income variable in the BRFSS is coded as one of eight ordered categories, leaving approximately nine percent of the sample in income categories where program eligibility cannot be precisely determined. Due to the inability to determine program eligibility for these childless adults, they are excluded from the analysis.

When examining the effect of insurance expansions on receipt of preventive care and access to physician services, it is important to consider the possibility of biased estimates due to self selection and unobserved heterogeneity. Even with a rich set of explanatory variables in the model, unobserved heterogeneity may be an issue if insurance is treated as exogenous. Differences in outcomes will reflect a combination of the causal effect of insurance and the effect of unmeasured characteristics that are correlated with insurance coverage. This problem can be mitigated through the use of a control group (Buchmueller et al., 2005). With difference-in-difference modeling, changes in the outcomes from the control group are subtracted from those of the treatment group, controlling for any group-specific and time-specific effects that may have affected access to health care during the study years (Wooldridge, 2002). The treatment group includes childless adults eligible for the public insurance coverage expansions, while the control group consists of near eligible childless adults below 300 percent of the federal poverty level in expansion states. An advantage of this approach is that it provides a within-state control for other factors affecting these groups that may have changed in the absence of the insurance expansions. In addition to the use of a control group, a rich set of covariates are used to account for different characteristics between the treatment and control groups across the study period. Insurance status and access to care are a function of the individual's eligibility for coverage, demographic and social characteristics, health status, and local area characteristics. The models have the following specification:

$$Insurance_{ijt} = \beta_0 + \beta_1 Post_{ijt} + \beta_2 ICSEligible_{ij} + \beta_3 Post*ICSEligible_{ijt} + \beta_4 TCSEligible_{ij} + \beta_5 Post*TCSEligible_{ijt} + \beta_6 X_{ijt} + \gamma STATE_j + \theta YEAR_t + \varepsilon_{ijt}$$

$$Access_{ijt} = \beta_0 + \beta_1 Post_{ijt} + \beta_2 ICSEligible_{ij} + \beta_3 Post*ICSEligible_{ijt} + \beta_4 TCSEligible_{ij} + \beta_5 Post*TCSEligible_{ijt} + \beta_6 X_{ijt} + \gamma STATE_j + \theta YEAR_t + \varepsilon_{ijt}$$

where the subscripts i, j and t stand for the i^{th} individual in the j^{th} state in the t^{th} time period. $Insurance_{ijt}$ is a dichotomous variable indicating health insurance status, and $Access_{ijt}$ is dichotomous variable indicating one of the access measures. X_{ijt} is a vector of personal characteristics common to the Insurance and Access equations including: age, gender, race/ethnicity, educational attainment, marital status, employment status, and health status. Using the survey date to determine if the observation is in the pre versus post expansion period, $Post_{ijt}$ is an indicator for whether the observation is in the post expansion period. $ICSEligible_{ij}$ and $TCSEligible_{ij}$ are indicators for whether the childless adult was eligible for an expansion with increased cost-sharing requirements or an expansion with traditional cost-sharing requirements using the state expansion eligibility criteria. The difference-in-difference effect is secured through the interaction of the time difference (pre/post) and the group difference (treatment/control). The variable $Post*ICSEligible_{ijt}$ indicates the effect of programs with increased cost-sharing requirements, while $Post*TCSEligible_{ijt}$ indicates the effect of programs with traditional cost-sharing requirements. State and year fixed effects are also included to capture permanent time invariant differences in state characteristics and overall trends in health insurance coverage and access to care. The models are identified by variation in eligibility across several dimensions, cross-state variation in the timing of the

expansion implementation, as well as cross-state and within-state variation over time in the income eligibility criteria for the expansion programs.

The estimation approach will not produce unbiased estimates if state decisions concerning health insurance expansions were based on anticipated state-specific trends in insurance coverage. For example, at the time of implementation states expecting strong economic growth may provide more generous expansions than states with weaker expected growth. Since the effect of the expansions is identified by state/year eligibility levels, state and year interactions cannot be used to mitigate potential policy endogeneity. To address the potential problem of policy endogeneity several policy relevant variables that vary across state and over time are included in the models, including: unemployment rates in years t and t-1, per capita income in years t and t-1, and rates of Medicaid managed care. These variables should capture the effect of potentially confounding state-specific trends. Additionally, standard errors are corrected for clustering at the state level.

All models were run in *Stata* version 10.1. The marginal effects of each of the explanatory variables on the dependent variable are reported. The marginal effect of each explanatory variable on the given measure of access can be interpreted as the percentage point change in the probability associated with a one unit change in the explanatory variables. In nonlinear models the magnitude of the interaction effect does not equal the marginal effect (Ai and Norton, 2003). Thus, the *inteff* command in *Stata* is used to compute the mean marginal effects and significance level of the interaction terms in the models (Norton et al., 2004).

Results

Descriptive statistics on insurance coverage, access measures, and demographic characteristics are shown in Table 2. The first column includes childless adults eligible for an insurance expansion with traditional public insurance cost-sharing requirements; the second column includes childless adults eligible for expansions with increased cost-sharing requirements, while the third column includes characteristics of the control group. As expected, insurance rates, access measures, and preventive screening utilization are lower among childless adults eligible for the public health insurance expansions as compared with the control group.

Table 3 displays the results for the logistic regression models examining the effect of the expansions on insurance status. This table not only presents the marginal effects of the main variables of interest, but also for several covariates included in the models. Results from the logistic regression models estimating the effect of program eligibility by cost-sharing level on the probability of insurance are presented in the first two columns. Childless adults eligible for expansion programs with increased cost-sharing requirements had a 2.1 percentage point increase in the probability of being insured, while those eligible for programs with traditional cost-sharing had a 3.9 percentage point increase. Additionally, the effect of the expansions on insurance status was estimated separately for women, as two of the access measures are limited to an all female sample. Childless adult females eligible for expansion programs with increased cost-sharing requirements had a 2.2 percentage point increase in the probability of being insured, while those eligible for programs with traditional cost-sharing had a 5.1 percentage point increase. Covariate estimates are presented for several of the covariates included in the models, and are in the expected direction, for example, individuals with higher incomes, higher educational levels, and workers, are more likely to be insured.

Table 4 displays the results for the logistic regression models examining the effect of the expansions on access to physician services. The first column presents the results of the eligibility expansions by cost-sharing requirements on the probability of having no cost barriers when seeking care from a doctor. Both traditional cost-sharing programs and increased cost-sharing programs significantly increase the likelihood of having no financial barriers to medical care. Each 10 percentage point increase in eligibility for programs with increased cost-sharing requirements results in a 0.22 percentage point increase in the likelihood one did not forgo needed care due to cost. In programs with traditional cost-sharing requirements, each 10 percentage point increase in eligibility results in a 0.28 percentage point increase in the probability of not forgoing needed care due to cost. As shown in Table 4, the expansions regardless of cost-sharing requirements had no impact on the probability of having a personal doctor.

Unlike access to physician services, cost-sharing levels seem to play an important role in the utilization of preventive health screenings. Estimates indicate that each 10 percentage point increase in eligibility for programs with traditional cost-sharing requirements results in a 0.41 percentage point increase in mammography screening rates among childless adults. Among programs with increased cost-sharing requirements no statistically significant increase in mammography screening rates were found (Table 5). Similar results are found when examining the use of recommended cervical cancer screenings as shown in the second column. Estimates indicate that each 10 percentage point increase in eligibility for programs with traditional cost-sharing results in a 0.30 percentage point increase in Pap test screening rates, while no statistically significant increase is found among those eligible for programs with increased cost-sharing requirements (Table 5). For cholesterol screening among men and women, each 10 percentage point increase in eligibility for programs with traditional

cost-sharing requirements results in a 0.22 percentage point increase in cholesterol screening rates, with no statistically significant increase among those eligible for programs with increased cost-sharing levels, as shown in Table 6. In each of these models covariate estimates are presented for several of the covariates included in the model and are in the expected direction. For example, married adults, those with higher income, and those with more education had higher probabilities of preventive service use.

Limitations

While this study provides valuable insight into the effect of insurance expansions among childless adults, it is also subject to certain limitations. First, this study only includes childless adults, and the results are not likely generalizable to the population as a whole. In addition, the use of BRFSS data complicates the ability to accurately determine program eligibility. Childless adults are identified by not reporting a child living in their household, rather than having their "own" child, potentially leading to a misclassification of some childless adults. Additionally, due to data limitations, program eligibility was determined only through changes in income eligibility, not taking into account asset test requirements in four of the programs. However, results were robust when excluding programs with asset tests from the analysis.

Another issue is that difference-in-difference analysis can be substantially affected by the choice of control group (Marquis and Long, 2003). To test the robustness of the results multiple control groups were employed. For example, the same analysis as presented here was conducted using a control group of low-income childless adults in states without childless adult insurance expansions and results were robust. However, the ability to restrict the income range of the control group is limited due to sample size restraints in the BRFSS.

For example, in two of the models when the control group is narrowed, the point estimates remain the same but the standard errors increase, resulting in statistically insignificant findings. Lastly, it is possible that the methods employed do not adequately address the endogeneity of insurance coverage. To further examine the endogeneity of insurance coverage additional models were estimated using a two-stage approach accounting for the potential endogeneity of insurance. Results from the two-stage modeling approach were robust.

Discussion

This study exploited the time variation in expansion program implementation and state variation in eligibility levels to assess the impact of childless adult health insurance expansions on insurance status and access to care. Results indicate that childless adult expansion programs resulted in significant gains in insurance coverage regardless of cost-sharing requirements. However, cost-sharing requirements were found to play an important role in providing access to preventive health screenings. The results indicate that the expansions had no impact on the likelihood of having a personal doctor or health care provider regardless of the cost-sharing requirement. Additionally, the cost-sharing level does not impact the likelihood of forgoing needed medical care due to costs, as both types of programs increase the probability that no financial barriers prevent eligible adults from seeking needed medical care.

These results indicate that eligible childless adults experience improved access to care during disease episodes regardless of the cost-sharing levels. While cost-sharing levels do not have an impact on having a personal doctor or removing barriers to care due to cost, cost-sharing plays an important role in providing access to recommended preventive health

screenings. The use of preventive health screenings significantly increased among childless adults eligible for programs with traditional cost-sharing levels. In programs with increased cost-sharing, there were either gains in screening utilization that were not statistically significant or no change that could be measured with the employed methods.

States may implement increased cost-sharing requirements for a variety of reasons. Increased cost-sharing requirements have financial implications for states as they reduce the public outlay of the program by placing more of the financial burden on enrollees, and can help reduce the use of unnecessary medical services. Increased cost-sharing in public insurance programs can also be used as a mechanism to reduce private insurance crowd-out by deterring those eligible from dropping their private insurance and joining public programs. Future studies need to address how various levels of cost-sharing are impacting overall program costs and the extent of private insurance crowd-out.

If the goal of public health insurance expansions is to increase access to care when needed, then both types of programs are accomplishing that mission. However, if the goal of public health insurance expansions is to also increase the use of preventive services, then it appears that only those with traditional public insurance cost-sharing requirements will help achieve that goal. As shown, insurance expansions with traditional Medicaid cost-sharing requirements appear to lead to an increased use of preventive health screenings, which in turn could positively impact the rate of early detection of disease and lead to more treatment options and better outcomes among those enrolled. Increased cost-sharing requirements may not allow newly expanded insurance coverage to increase the use of clinically indicated preventive services. Failure to receive such services may result in later stage diagnosis and higher treatment costs over time.

The magnitude of the effects on insurance status and access to care found in this study are modest but similar in magnitude to other studies in the literature examining the effect of public health insurance expansions for adults (Aizer and Grogger, 2003; Busch and Duchovny, 2005; Kronick and Gilmer, 2002). The magnitude of the effects found in this study may be small for several reasons; the availability of charity care has been shown to reduce the demand for health insurance and increase the likelihood of being uninsured, especially among the low income (Herring, 2005; Rask and Rask, 2000). Additionally, information and administrative costs, along with the perceived stigma and reputation of public insurance have been shown to be important barriers to enrollment in public insurance programs (Aizer, 2007; Ketsche et al., 2007).

While the results of this analysis demonstrates that adult health insurance expansions have led to increases in insurance coverage and access to care, much work is left to be done. With recent passage of the Patient Protection and Affordable Care Act (PPACA), Medicaid will be expanded to all citizens, including childless adults, up to 133 percent of the federal poverty level. Additionally, those between 133 and 400 percent of the federal poverty level will be eligible for subsidies to purchase coverage through insurance exchanges. The findings here indicate that expanding health insurance to low income childless adults presents a promising opportunity to not only increase insurance rates, but also to improve access to care. The elimination of cost-sharing requirements for recommended preventive services has the potential to significantly increase the utilization of preventive health services among the newly insured population. However, in order to achieve the large reductions in the number of uninsured as anticipated under PPACA, the expansions must be carefully designed and implemented in an effort to limit enrollment barriers. It is clear that more work needs to be done to better understand these barriers, and the role they will play under PPACA.

Additionally, it will be important to understand whether the individual insurance mandate, and the related financial penalty for remaining uninsured helps lead to the magnitude of increases anticipated.

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Table 1: Summary of childless adult health insurance expansions

State Program	Year Implemented	Income Eligibility	Cost Sharing Level
Arizona HIFA	2001	≤ 100% FPL	Traditional
District of Columbia Healthcare Alliance Program	2001	≤ 200% FPL	Traditional
IowaCare	2005	≤ 200% FPL	Traditional
MaineCare for Childless Adults	2002	≤ 100% FPL	Traditional
Maine Dirigo Choice	2005	≤ 300% FPL	Traditional/Increased*
Maryland Primary Adult Care Program	2006	≤ 116% FPL	Traditional
New Mexico State Coverage Insurance	2005	≤ 200% FPL	Traditional/Increased‡
New York Family Health Plus	2001	≤ 100% FPL	Increased
Insure Oklahoma	2005	≤ 200% FPL	Increased
Oregon Family Health Insurance Assistance Program	1998	≤ 185% FPL	Increased
Pennsylvania adultBasic	2002	≤ 200% FPL	Increased
Utah Primary Care Network	2002	≤ 150% FPL	Increased

Notes: Program eligibility and benefits determined using Centers for Medicare and Medicaid Services (CMS) fact sheets, State Coverage initiatives (SCI), and program websites.
* Traditional cost-sharing for preventive care; increased cost-sharing for physician services.
‡ Individuals greater than 100% of the federal poverty level (FPL) face increased cost-sharing requirements (except for preventive care).
HIFA, Health Insurance Flexibility and Accountability.

Table 2: Descriptive statistics of childless adult sample, 1997-2007
Behavioral Risk Factor Surveillance System (BRFSS)

Variable	Traditional Cost Sharing Program Eligible	Increased Cost Sharing Program Eligible	Near Eligible
Insured	68.80	66.08	81.74
No Barriers Due to Cost	74.80	72.24	83.80
Personal Doctor	72.99	74.94	80.60
Mammogram	53.30	47.59	57.21
Pap Test	60.32	53.78	63.97
Cholesterol Screening	74.52	75.21	80.44
Income: 10,000-14,999	23.00	29.13	3.35
Income: 15,000-19,999	20.56	20.79	5.32
Income: 20,000-24,999	18.10	14.23	17.61
Income: 25,000-34,999	7.61	2.00	35.74
Income: 35,000+	0.92	0.04	33.47
Age: 19-34	23.93	24.96	21.87
Age: 35-49	26.15	26.06	24.39
Age: 50-64	49.91	48.97	53.74
Female	57.93	58.92	57.96
Black	10.10	8.59	7.95
Hispanic	10.82	6.61	8.34
Other Race	5.26	6.65	6.47
Household Size	1.86	1.98	1.79
High School Graduate	39.75	42.50	36.48
Some College	27.47	27.40	31.03
College Graduate	17.17	13.39	24.58
Married	26.79	26.77	43.29
Health Status: Excellent/Very Good	38.56	33.25	49.41
Health Status: Fair/Poor	29.68	35.92	19.07
One or More Chronic Conditions	34.85	34.39	32.33
Worker	42.84	38.89	54.57
Self Employed Worker	11.59	8.34	8.25
Student	6.79	6.80	4.01
Number of observations	12,346	11,629	51,576

†Traditional cost-sharing programs are defined as those with co-payment requirements similar to the Medicaid program, ranging from $0 to $3.
‡Increased cost-sharing expansion programs are defined as those with co-payments above the traditional Medicaid level, ranging from $5 to $25.

Table 3: The effect of expansion program eligibility on insurance status

	Insured	Insured (Females Only)
Post	-0.012 (0.008)	-0.014 (0.007)**
ICS Eligible	-0.048 (0.008)***	-0.039 (0.011)***
Post*ICS Eligible	0.021 (0.004)***	0.022 (0.007)***
TCS Eligible	-0.048 (0.022)**	-0.053 (0.026)**
Post*TCS Eligible	0.039 (0.015)**	0.051 (0.027)*
Income: 10,000-14,999	-0.028 (0.009)***	-0.039 (0.009)***
Income: 15,000-19,999	-0.005 (0.010)	0.002 (0.007)
Income: 20,000-24,999	0.038 (0.011)***	0.046 (0.009)***
Income: 25,000-34,999	0.116 (0.009)***	0.121 (0.006)***
Income: 35,000+	0.172 (0.011)***	0.171 (0.009)***
Age: 35-49	0.022 (0.006)***	0.014 (0.007)*
Age: 50-64	0.089 (0.007)***	0.077 (0.008)***
Female	0.032 (0.009)***	
Black	-0.029 (0.010)***	-0.038 (0.011)***
Hispanic	-0.048 (0.016)***	-0.042 (0.014)***
Other Race	-0.021 (0.013)	-0.028 (0.014)**
Household Size	-0.019 (0.004)***	-0.020 (0.004)***
High School Graduate	0.055 (0.007)***	0.047 (0.006)***
Some College	0.082 (0.008)***	0.068 (0.007)***
College Graduate	0.096 (0.007)***	0.085 (0.007)***
Married	0.029 (0.007)***	-0.005 (0.007)
Health Status: Excellent/Very Good	0.016 (0.004)***	0.010 (0.004)**
Health Status: Fair/Poor	0.040 (0.007)***	0.039 (0.007)***
Chronic Condition	0.062 (0.005)***	0.048 (0.005)***
Worker	0.016 (0.009)*	0.017 (0.010)*
Self Employed Worker	-0.214 (0.011)***	-0.196 (0.009)***
Student	0.051 (0.013)***	0.044 (0.009)***
Physicians per 1,000	0.002 (0.002)	0.004 (0.002)**
Number of FQHC's	-0.001 (0.001)	-0.001 (0.000)
Medicaid-to-Medicare Fee Ratio	-0.004 (0.033)	-0.009 (0.048)
Metro	0.020 (0.008)**	0.020 (0.010)**
Urban	-0.004 (0.008)	-0.005 (0.007)
Rural	-0.012 (0.011)	-0.012 (0.023)

Notes: All regressions include state and year dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1 and state Medicaid managed care rates. Standard errors are corrected for clustering at the state level.

*** Significant at $p<0.01$.

** Significant at $p<0.05$.

* Significant at $p<0.10$.

Table 4: The effect of expansion program eligibility on access to physician services

	No Cost Barriers†	Personal Doctor‡
Post	-0.010 (0.007)	0.009 (0.013)
ICS Eligible	-0.016 (0.008)**	-0.012 (0.007)*
Post*ICS Eligible	0.022 (0.012)*	0.001 (0.006)
TCS Eligible	-0.005 (0.015)	0.015 (0.012)
Post*TCS Eligible	0.028 (0.010)***	-0.005 (0.006)
Income: 10,000-14,999	-0.010 (0.009)	-0.007 (0.006)
Income: 15,000-19,999	0.004 (0.006)	0.008 (0.007)
Income: 20,000-24,999	0.046 (0.011)***	0.041 (0.008)***
Income: 25,000-34,999	0.109 (0.011)***	0.083 (0.006)***
Income: 35,000+	0.151 (0.012)***	0.115 (0.010)***
Age: 35-49	-0.007 (0.005)	0.066 (0.004)***
Age: 50-64	0.064 (0.008)***	0.133 (0.007)***
Female	-0.046 (0.007)***	0.105 (0.007)***
Black	0.008 (0.010)	-0.014 (0.011)
Hispanic	-0.012 (0.008)	-0.035 (0.018)*
Other Race	0.003 (0.013)	-0.041 (0.007)***
Household Size	-0.014 (0.003)***	-0.004 (0.003)
High School Graduate	0.029 (0.005)***	0.042 (0.008)***
Some College	0.009 (0.005)*	0.057 (0.008)***
College Graduate	0.008 (0.008)	0.047 (0.010)***
Married	0.005 (0.006)	0.024 (0.004)***
Health Status: Excellent/Very Good	0.065 (0.003)***	-0.006 (0.004)
Health Status: Fair/Poor	-0.059 (0.007)***	0.044 (0.004)***
Chronic Condition	0.007 (0.002)***	0.118 (0.004)***
Worker	-0.005 (0.005)	-0.031 (0.005)***
Self Employed Worker	-0.090 (0.007)***	-0.113 (0.011)***
Student	0.052 (0.009)***	-0.028 (0.007)***
Physicians per 1,000	-0.002 (0.001)	-0.004 (0.001)***
Number of FQHC's	0.000 (0.000)	-0.002 (0.000)***
Medicaid-to-Medicare Fee Ratio	0.052 (0.055)	0.184 (0.111)*
Metro	0.002 (0.006)	0.011 (0.010)
Urban	-0.001 (0.006)	0.003 (0.010)
Rural	-0.015 (0.020)	-0.006 (0.029)

Notes: All regressions include state and year dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1 and state Medicaid managed care rates. Standard errors are corrected for clustering at the state level.

*** Significant at p<0.01.

** Significant at p<0.05.

* Significant at p<0.10.

† BRFSS data available for 1997-2000, 2003-2007.

‡ BRFSS data available for 2001-2007.

Table 5: The effect of expansion program eligibility on access to cancer screening

services

	Mammogram	Pap Test
Post	-0.020 (0.014)	-0.017 (0.020)
ICS Eligible	0.003 (0.013)	0.001 (0.022)
Post*ICS Eligible	-0.011 (0.013)	0.030 (0.022)
TCS Eligible	-0.012 (0.030)	0.003 (0.012)
Post*TCS Eligible	0.041 (0.023)*	0.030 (0.017)*
Income: 10,000-14,999	-0.016 (0.014)	0.011 (0.014)
Income: 15,000-19,999	-0.000 (0.011)	0.037 (0.015)**
Income: 20,000-24,999	0.057 (0.008)***	0.061 (0.009)***
Income: 25,000-34,999	0.110 (0.020)***	0.108 (0.017)***
Income: 35,000+	0.165 (0.023)***	0.140 (0.016)***
Age: 35-49	(ref)	-0.090 (0.012)***
Age: 50-64	0.130 (0.006)***	-0.096 (0.013)***
Black	0.095 (0.013)***	0.064 (0.008)***
Hispanic	0.076 (0.018)***	0.054 (0.013)***
Other Race	0.042 (0.036)	-0.010 (0.019)
Household Size	-0.035 (0.006)***	-0.035 (0.009)***
High School Graduate	0.042 (0.014)***	0.035 (0.017)**
Some College	0.038 (0.015)**	0.052 (0.015)***
College Graduate	0.068 (0.021)***	0.075 (0.022)***
Married	0.047 (0.008)***	0.059 (0.014)***
Health Status: Excellent/Very Good	0.004 (0.007)	0.017 (0.012)
Health Status: Fair/Poor	-0.010 (0.010)	-0.008 (0.012)
Chronic Condition	0.056 (0.012)***	0.037 (0.019)**
Worker	-0.034 (0.005)***	0.017 (0.010)*
Self Employed Worker	-0.103 (0.018)***	-0.059 (0.017)***
Student	-0.060 (0.045)	0.002 (0.020)
Physicians per 1,000	0.002 (0.004)	0.004 (0.003)
Number of FQHC's	0.000 (0.001)	-0.000 (0.001)
Age of NBCCEDP	-0.001 (0.004)	-0.014 (0.005)***
Medicaid-to-Medicare Fee Ratio	0.151 (0.056)***	0.207 (0.063)***
Metro	0.024 (0.015)	0.026 (0.018)
Urban	0.016 (0.016)	0.025 (0.013)*
Rural	0.009 (0.018)	0.077 (0.035)**

Notes: All regressions include state and year dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1 and state Medicaid managed care rates. Standard errors are corrected for clustering at the state level.
*** Significant at p<0.01.
** Significant at p<0.05.
* Significant at p<0.10.
BRFSS data available for 1997-2000, 2002, 2004, 2006.

Table 6: The effect of expansion program eligibility on access to cholesterol screening

	Cholesterol Screening
Post	0.023 (0.009)***
ICS Eligible	0.001 (0.014)
Post*ICS Eligible	0.004 (0.008)
TCS Eligible	-0.029 (0.012)**
Post*TCS Eligible	0.022 (0.010)**
Income: 10,000-14,999	0.015 (0.008)*
Income: 15,000-19,999	0.036 (0.009)***
Income: 20,000-24,999	0.048 (0.014)***
Income: 25,000-34,999	0.085 (0.014)***
Income: 35,000+	0.114 (0.017)***
Age: 35-49	(ref)
Age: 50-64	0.073 (0.006)***
Female	0.066 (0.007)***
Black	-0.005 (0.007)
Hispanic	-0.007 (0.013)
Other Race	0.005 (0.015)
Household Size	-0.005 (0.004)
High School Graduate	0.036 (0.007)***
Some College	0.067 (0.006)***
College Graduate	0.077 (0.007)***
Married	0.027 (0.006)***
Health Status: Excellent/Very Good	0.016 (0.007)**
Health Status: Fair/Poor	0.028 (0.005)***
Chronic Condition	0.241 (0.007)***
Worker	-0.025 (0.004)***
Self Employed Worker	-0.079 (0.005)***
Student	0.010 (0.032)
Physicians per 1,000	0.005 (0.002)**
Number of FQHC's	-0.001 (0.001)
Medicaid-to-Medicare Fee Ratio	-0.035 (0.088)
Metro	0.024 (0.006)***
Urban	0.004 (0.006)
Rural	0.022 (0.017)

Notes: All regressions include state and year dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1 and state Medicaid managed care rates. Standard errors are corrected for clustering at the state level.
*** Significant at $p<0.01$.
** Significant at $p<0.05$.
* Significant at $p<0.10$.
BRFSS data available for 1997, 1999, 2001, 2003, 2005, 2007.

CHAPTER 2

The Impact of Public and Private Health Insurance Premiums on the Health Insurance Status of Low Income Childless Adults

Abstract

Recent passage of the Patient Protection and Affordable Care Act (PPACA) will substantially increase public health insurance eligibility and alter the costs of insurance coverage. This study uses Current Population Survey (CPS) data from 2000-2008 to examine the effects of public and private health insurance premiums on the insurance status of low income childless adults, a population that will be substantially affected by PPACA. The results show that reduced public premiums are associated with an increase in the probability of public health insurance and a decreased probability of private health insurance and uninsurance. Additionally, the results show that reduced private premiums increase the probability of private insurance and decrease the probability of uninsurance. Using the regression results the effects of PPACA premium levels on the insurance status of childless adults are simulated. Among states with current programs, increased eligibility and premium changes under PPACA would provide health insurance coverage to an additional 507,605 uninsured childless adults.

Introduction

Low income childless adults are among the most likely group of Americans to be uninsured. In 2008, childless adults accounted for 58 percent of the nonelderly uninsured. Among childless adults below the federal poverty level, 47 percent are uninsured (Hoffman et al., 2009). One reason for low coverage among this population is that many do not have access to employer-sponsored insurance and cannot afford coverage through the individual market. Additionally, few non-elderly childless adults qualify for public health insurance programs unless they are disabled or pregnant (Artiga and Schwartz, 2010). Additional factors leading to high rates of uninsurance among this population include: disenrollment from their parents plan at a certain age, a belief that they are healthy and not in need of medical care, and a reliance on the health care safety net. These high levels of uninsurance lead to incomplete risk pooling within the health insurance market. A significant amount of evidence suggests that lack of health insurance results in worse health outcomes, as the uninsured receive less preventive care, are diagnosed at more advanced disease stages, receive less comprehensive care and have higher mortality rates (Coleman et al., 2002). Lack of insurance also places individuals and their families at risk of financial catastrophe, as medical bills have been found to be a contributing factor in a significant amount of personal bankruptcies (Dranove and Millenson, 2006).

Recent passage of the Patient Protection and Affordable Care Act (PPACA) will substantially increase eligibility for public health insurance and alter the costs of private coverage among the low income childless adult population. Given this policy change, it is important to understand how premium levels will affect insurance status. To examine this issue, this study exploits previous state level childless adult health insurance expansions to analyze the effect of both public and private premium levels on the insurance status of low

income childless adults. Previous state level expansions have sought to address the high levels of uninsurance among childless adults by addressing the affordability barrier. These expansion efforts have taken a variety of forms. States could use Section 1115 or other waivers to provide coverage either through the Medicaid or State Children's Health Insurance Program (SCHIP), a newly developed public insurance program, or by subsidizing private health insurance through premium assistance programs. Given the flexibility states have in designing and implementing their expansion programs, many childless adult programs require more cost-sharing than the typical Medicaid program, often in the form of premiums. Premium requirements may limit the extent of private insurance crowd-out and help states constrain program costs. However, premiums also have the potential to reduce participation rates, as low-income enrollees may be unable to afford the premium. To promote coverage through the private market, some state programs have relied on the use of premium subsidies for private health insurance. By effectively reducing the enrollee cost of private insurance, these subsides have the potential to increase private coverage.

The purpose of this paper is to examine the effect of public and private health insurance premiums on the insurance status of low income childless adults. This paper fills a gap in the literature by providing an analysis of the effect of both public and private premium levels on the insurance status of low income childless adults. This is a very timely analysis with important implications, given recent passage of PPACA and the inherent changes in health insurance premium levels.

Background

A number of earlier studies have found that new or increased premiums resulted in lower enrollment in public insurance programs (Artiga and O'Malley, 2005; Kenney et al.,

2006; Ku and Coughlin, 1999). Other studies have examined policy changes in individual states, consistently finding that program participation relies heavily on premium levels. In Oregon, premium increases resulted in large enrollment reductions, with approximately one-third of enrollees citing premium costs as the reason for disenrollment (Carlson and Wright, 2005; McConnell and Wallace, 2004). Even without increases in premiums low income individuals may be unable to afford premium payments leading to disenrollment (Office of Health Care Statistics, 2004). Conversely, premium reductions have been shown to lead to increased program participation rates (Long and Marquis, 2002).

While these studies examine the effect of premiums on public insurance rates very few control for the price of private health insurance. As the literature suggests, private health insurance premiums have an important impact on health insurance status, and hence are likely to affect the ability of states to charge premiums and achieve the intended goals. Chernew et al. (2005) found that over half of the decline in insurance coverage rates in the 1990's was due to increases in private health insurance premiums. Cunningham et al. (2002) found that increased private premiums decreased the likelihood of having private insurance versus public coverage and being uninsured among those eligible for public health insurance expansions. High private health insurance premiums likely act as a deterrent for low income individuals in obtaining private health insurance coverage. In an effort to increase or maintain private health insurance coverage rates, state premium assistance programs provide subsidies to help lower enrollee premiums. The literature suggests that while insurance subsidies increase participation, rather high levels are needed to encourage significant participation rates (Chernew et al., 1997; Marquis and Long, 1995; Thomas, 1994; Thorpe et al., 1992).

Health insurance expansions are designed with the intention of increasing insurance coverage among those currently uninsured. However, once eligible for public health insurance individuals may drop their private insurance and participate in the public program. While there is little agreement in the literature on the exact magnitude of crowd-out there is broad agreement that it does exist to some degree (Aizer and Grogger, 2003; Blumberg et al., 2000; Cutler and Gruber, 1996; Dubay and Kenney, 1997; Dubay and Kenney, 1996; Ham and Shore-Sheppard, 2005; Hudson et al., 2005; Lo Sasso and Buchmueller, 2004; Shore-Sheppard, 2005; Thorpe and Florence, 1998; Yazici and Kaestner, 2000). In an effort to limit the extent of crowd-out, many state health insurance expansions include anti crowd-out provisions, such as waiting periods and higher cost-sharing in the form of premiums. Bansak and Raphael (2006), find that anti crowd-out efforts explain approximately one quarter of the cross state variation in SCHIP take up rates. Lo Sasso and Buchmueller (2004), find that anti crowd-out provisions such as waiting periods have been effective, while Gruber and Simon (2008) find little evidence that waiting periods reduce crowd-out and no evidence that increased cost-sharing requirements reduce its extent.

Very few studies have examined how public insurance premiums affect insurance status while controlling for the cost of private insurance coverage, although two studies examined the role of both public and private premiums on children's health insurance coverage. These authors found that increases in public premiums reduces enrollment in public programs, while increasing the likelihood of private coverage and uninsurance. Additionally, higher private premiums were associated with a lower probability of private coverage and higher probabilities of public coverage and uninsurance. The authors suggest that states that impose or increase insurance premiums for near poor children will succeed in

discouraging the crowd-out of private insurance, but at the expense of higher uninsurance rates among children (Hadley et al., 2006/2007; Kenney et al., 2006/2007).

Data and Methods

Conceptual Framework

The analysis is based on a standard economic model of the demand for health insurance. Health insurance coverage decisions are based on the costs of available coverage choices, income, health, and personal characteristics (Hadley and Reschovsky, 2002; Marquis and Holmer, 1996). Childless adult health insurance expansions alter the choice set available to those eligible. Adults eligible for public coverage can choose to take up such coverage or remain either privately insured or uninsured. Similarly those eligible for private coverage subsidies can choose to enroll or remain in their current insurance state. The key variable of interest in the analysis is the premium required to enroll in the public and private insurance programs. The empirical model assumes that the choice an individual makes depends on the costs of each of the alternative insurance options. The probability of each type of insurance is estimated while controlling for the cost of each available option and individual characteristics likely to affect the choice of coverage. It is hypothesized that for those eligible for public insurance, the lower the public premium the greater the likelihood of public insurance, holding constant the price of private insurance. Since public insurance expansions typically provide free or low cost insurance, some degree of private insurance crowd-out is expected in the multinomial logistic regression model. Additionally, as states' premium subsidies reduce the price of private health insurance coverage, it is expected this reduction will increase the likelihood that eligible individuals are privately insured and less likely to be uninsured.

Data

The primary data for the analysis come from the March supplement to the Current Population Survey (CPS) from 2000-2008. The March supplement to the CPS is the most commonly used source of data on health insurance status in the United States, providing a large database with detailed demographic, employment, and health insurance information. Most importantly, the CPS includes information on family structure, household income, and state identifiers making it possible to impute eligibility and premium levels for health insurance expansion programs given each state's eligibility criteria. Table 1 displays the characteristics of the 19 states and the District of Columbia included in this analysis that have implemented a childless adult health insurance expansion. As these data show, eight of the states used premiums as part of their public insurance expansion programs. These policy changes provide a quasi-experiment in that some childless adults are exposed to premiums while others are not. The private premiums shown in the last column of Table 1 is the net price of private insurance the eligible group faces, as it incorporates the subsidy provided to eligible childless adults in the six states with such a program.

Insurance Status

The dependent variable used in the analysis is self reported health insurance status. In the CPS, individuals are asked to report all types of health insurance coverage they had in the previous year, leading to some individuals reporting multiple types of coverage. To assign one type of insurance coverage to each individual a hierarchy is used; those reporting any form of private coverage, followed by those reporting public coverage, followed by no insurance. Those with access to other forms of public insurance, such as pregnant women,

and those reporting coverage through TRICARE are excluded, as these individuals are faced with a different insurance choice set. The definition of a family within the CPS data is not necessarily the same as the definition used by states when determining insurance eligibility. To determine insurance expansion eligibility household members were placed into health insurance units (HIUs), allowing for the grouping of individuals according to their insurance eligibility rather than relatedness or household membership. The study sample consists of adults age 19-64 who live in HIU's without children and who meet the eligibility criteria for their state health insurance program. Sample sizes are shown in Table 2.

Eligibility and Premium Determination

The key independent variables in the analysis are the public and private health insurance premiums faced by those eligible for childless adult health insurance expansions. To be considered eligible, individuals must meet both income and categorical requirements. Income eligibility is determined by comparing HIU income relative to the federal poverty level (FPL) to the maximum income allowed by the insurance program in each individual's state at the time of the interview. The eligibility determination also takes into account family structure, age of the adult, and in some cases, firm size and employment status. Among those eligible for public insurance, it is determined whether they face a premium and, for those facing a premium, the annual premium amount. Public insurance premiums were obtained for each state and year using state program websites and premium schedules in effect at the time of the survey. The public premium was set to zero for childless adults eligible for programs that do not charge a premium. The consumer price index (CPI) was used to adjust all premiums to 2008 dollars.

To estimate private health insurance premiums for each HIU data from the Medical Expenditure Panel Survey – Insurance Component (MEPS-IC) was abstracted. Specifically, private health insurance individual plan premium levels for firms of different sizes in each state and year was obtained and applied to observations in the CPS by work status and firm size of the adults living in the household. To merge the MEPS-IC data with the CPS dataset a HIU level firm size hierarchy variable was created, as previously used in the literature (Kenney et al., 2006/2007). The hierarchy applied to all HIU's with at least one non-self employed worker as follows: any adult in the HIU working for a firm with 1,000 employees or more, 100-999 employees, 25 to 99 employees, 10-24 employees, and less than 10 employees. The underlying assumption of this approach is that if both members of a married couple in an HIU are employed, the couple will take up coverage from the larger employer. Adults in an HIU without a non-self employed worker were assigned the premium level faced by employees in firms with fewer than 10 employees. A key assumption made is that individuals face the full price of the private health insurance premium, either directly or through reduced wages, an assumption commonly supported in the literature (Miller, 2004; Olson, 2002; Sheiner, 1999). Additional adjustments are made for private premium levels among those eligible for premium assistance programs using state rules in place at the time of the survey. For example, if an individual is determined to be eligible for a premium subsidy of 30 percent, the annual private premium they would face is reduced by the corresponding amount. In instances where MEPS-IC data was unavailable, premium levels were imputed using the data available. As with public premiums, private insurance premiums are adjusted to 2008 dollars using the CPI.

Multivariate Analysis and Identification

Two separate sets of models are used to examine the effect of premiums on insurance status. First, a multinomial logistic regression model is used to analyze the effects of both public and private health insurance premiums among childless adults eligible for public health insurance expansions. This analysis allows for the assessment of a multinomial dependent variable of insurance status, indicating either public insurance, private insurance, or uninsurance. The key independent variables of interest in this model include both the imputed annual public health insurance premium and the imputed annual private health insurance premium. Second, a multivariate logistic regression model is used to examine the effect of private health insurance premium levels on insurance status among childless adults eligible for a premium assistance program. The dependent variable in this specification is a dichotomous measures of insurance status of the eligible childless adult (insured/uninsured). In this specification the key independent variable of interest is the imputed annual private health insurance premium adjusted for the premium assistance subsidy. Unlike the previous model, a public insurance premium is not included, as this population is not eligible for public coverage.

In each of the multivariate models a number of variables are included to control for demographic and socioeconomic characteristics. Childless adult characteristics include: age, gender, race/ethnicity, marital status, HIU income (adjusted by the CPI), citizenship status, health status, highest educational attainment level in the HIU, and HIU work status (any adult working full time/full year, any adult working full time/part year, any adult working part time). County level unemployment rates are also included, as local labor market characteristics are likely to affect both access to private health insurance and enrollment in public insurance programs (Cawley and Simon, 2005). State and year fixed effects are included in the model to capture permanent time invariant differences in state characteristics

and overall secular trends. All of the models are estimated using *Stata* version 10.1 and standard errors are adjusted for clustering on state and year.

Identification of the public premiums effect on health insurance status is derived from variation in premiums across states due to differences in premium requirements, within states due to varying premium requirements by HIU income, and over time due to changes in program premium levels. Identification of the private insurance premium effect on health insurance status is derived from a combination of cross state variation in premiums, within state variation in premiums by firm size, and changes over time in real private insurance premiums. There is additional variation in private premiums both within and across states due to different premium subsidy levels over time and by income in the premium assistance models. As demonstrated by the data in Table 1, there is a great deal of variation in both the public and private insurance premium levels. The range of public premiums is from $0 to $2640, while private premiums range from $0 to $6,078.

Results

Table 2 provides summary statistics for the sample of eligible childless adults pooled across states and over the 2000-2008 time period. The first column includes childless adults eligible for public health insurance expansions, while the second column includes those eligible for premium assistance programs. Childless adults eligible for public insurance expansions are more likely be insured, have lower household income, are younger, are less likely to be in a household with a full time worker, and are less likely to be married than those eligible for premium assistance programs. Among those eligible for public insurance 46 percent had private insurance, 18 percent had public insurance, and 36 percent are uninsured. It is interesting to note that a large portion of those eligible for public insurance

are privately insured, highlighting the potential for crowd-out among this population. Additionally, it is interesting to note the high uninsurance rate among those eligible for public insurance programs. Among this group, the average annual public health insurance premium was $163, while the average annual private health insurance premium was $4318. Among those eligible for premium assistance programs, 43 percent are uninsured. As expected, the average private health insurance premium facing those eligible for premium subsidies is markedly lower at $1428 than the private premium faced by those in states without premium assistance programs.

The multinomial logistic regression results for childless adults eligible for public health insurance expansions are presented in Table 3. The table presents the coefficients and standard errors for private health insurance versus public insurance, and uninsurance versus public insurance. The results indicate that reductions in public premiums increase the likelihood of being publicly insured, while reducing the probability of being privately insured and uninsured. The results also indicate that decreases in private health insurance premiums increase the probability of being privately insured relative to having public insurance coverage. The covariates included in the model are in the expected direction. For example, those that are black, Hispanic, other race, in poorer health, unmarried, and with less education are less likely to have private health insurance relative to being publicly insured. Individuals who are older, non-citizens, and in better health are more likely to be uninsured relative to being publicly insured.

The logistic regression results for the models consisting of childless adults eligible for premium assistance programs are presented in Table 4. The table presents the coefficients and standard errors for being uninsured relative to being insured. The results indicate that lower private insurance premiums increase the likelihood of being insured. Hence premium

subsidies that effectively reduce the price of private insurance increase the likelihood of childless adults being insured relative to being uninsured. The covariates included in the model are in the expected direction. For example, those with lower household income, lower levels of education, unmarried individuals, non-citizens and males are more likely to be uninsured.

Sensitivity Analysis

A number of alternative models were estimated to examine the robustness of the findings. First, to account for the possibility that some public health insurance programs could be mistaken by survey respondents for private health insurance plans, models in which non-group private coverage is classified as public insurance were examined (Lo Sasso and Buchmueller, 2004). Second, to test the robustness of the results by the treatment of respondents reporting more than one type of coverage, public coverage was placed at the top of the hierarchy, followed by private insurance and uninsured. Third, to account for the possibility that states requiring premiums for their public health insurance expansion programs are systematically different than those without premium requirements in ways that state level fixed effects will not account for, models with just a subset of states with premium requirements were examined. Lastly, models with a sample restricted to citizens were examined. The primary results of the alternative model specifications are the same as those found in the core models. In each of the alternative public insurance models the results suggest that higher public premium levels lead to an increased likelihood of both private health insurance and uninsurance. The results from the alternative premium assistance models also show that higher private premiums are associated with an increased likelihood

of uninsurance. Overall, the sensitivity tests imply a generally robust relationship between premium levels and health insurance status.

Simulations

Multivariate regression results were used to simulate coverage changes associated with the public and private premium levels that will be implemented under PPACA. Under PPACA childless adults under 133% FPL would be eligible for public coverage through Medicaid without a premium, and those between 133-400% FPL would be eligible for subsidies to purchase private insurance through insurance exchanges. Among those receiving subsides, premium contributions are limited to a percentage of income for specified income levels on a sliding scale from 4.0% to 9.5%. Thus, in the simulation models the premium levels of those that would be eligible for either Medicaid were adjusted by assigning them a public premium of zero, and private premium levels were restricted to be no greater than the maximum premium amount specified under PPACA. The simulation models exclude non-citizens, as their premium levels will remain unaffected, since they will not be eligible for Medicaid or premium subsidies.

Table 5 presents the simulation results under the scenario in which premiums are set to the levels specified under PPACA among those currently eligible for public insurance. Premium level changes would increase the probability of being covered with public insurance from 18.34% to 18.66%, an increase of 1.71 percent; the probability of being privately insured increases from 48.61% to 50.25%, an increase of 3.26 percent; and the percentage uninsured decreases from 33.05% to 31.09%, a decrease of 5.93 percent. Among those currently eligible for premium assistance, the reduced private premiums as a result of

PPACA would result in a 14.56 percent decrease in uninsurance rates, a reduction from 37.02% to 31.63%.

To better understand the potential effect of PPACA among all childless adults in the study states, the results were applied to all childless adults that will become eligible for either Medicaid or premium subsidies. Baseline uninsurance rates among childless adults were obtained from the 2008 CPS data. Among childless adults with incomes up to 133% FPL, 33.78% were uninsured in 2008. When applying the 5.93% reduction in uninsurance found in the simulation models among those eligible for public coverage, the uninsurance rates among this population decreases to 31.77%, with 149,607 childless adults gaining health insurance coverage. Similarly, the results were applied to childless adults between 134-400% FPL. The uninsurance rate among this group in 2008 was 21.25%. When applying the 14.56% reduction in uninsurance rates found through simulation modeling uninsurance rates fall to 18.16%, with 357,998 childless adults gaining health insurance. Among all childless adults under 400% FPL in the study states, eligibility for either Medicaid or premium subsidies under PPACA would result in a reduction in uninsurance rates from 26.16% to 23.50%, with 507,605 childless adults gaining health insurance coverage (Table 6).

Limitations

While the results from this study are robust to many different model specifications, the results may be limited, as only childless adults eligible for health insurance expansions in 19 states and the District of Columbia are included in the analysis. Additional limitations include the reliance on imputed values for public and private health insurance premiums, which may introduce measurement error into the analysis. There are also some limitations in the simulation models examining the premium levels under PPACA. In the simulation

models, the effect of changing premium levels are estimated under PPACA among childless adults in states with current childless adult health insurance expansion programs. It is anticipated that the effect of PPACA will be even more pronounced on the population of childless adults in states without previous childless adult health insurance expansion programs. Lastly, in the simulations using the PPACA premium levels, the cost of remaining uninsured is not incorporated. Together, these factors may lead to the underestimation of the policy effect in this analysis.

Discussion and Policy Implications

This analysis finds that among those eligible for public health insurance expansions, higher public insurance premiums are associated with a lower probability of individuals being covered with public insurance, and an increased probability of both private insurance and uninsurance. These findings suggest that increased public premiums appear to be discouraging crowd-out but at the cost of higher uninsurance rates. Additionally, among those eligible for public insurance, the analysis finds that higher private health insurance premiums are associated with an increased probability of uninsurance and public insurance coverage.

The findings from this analysis are consistent with previous research analyzing the effect of public and private health insurance premiums on insurance status (Hadley et al., 2006/2007; Kenney et al., 2006/2007). This study extends upon the previous literature by examining the effects among childless adults, a population seldomly examined. Additionally, this study provides an analysis examining the effect of private health insurance premiums on the insurance status of those eligible for premium assistance programs, finding that higher private health insurance premiums are associated with higher rates of uninsurance.

With recent passage of PPACA, childless adults with incomes at or below 133% FPL will be eligible for public health insurance through Medicaid. This expansion of coverage will provide them with a comprehensive benefit package without premium requirements specifically designed to meet the needs of the low income population. Additionally, childless adults with incomes between 133-400% of the FPL will be eligible for refundable and advanceable premium credits to purchase private health insurance through health insurance exchanges. Premium contributions are limited on a sliding scale basis to a percentage of income, with higher income individuals paying a greater share of their income on premiums (ranging from 4.0% to 9.5% of annual income). This study finds that expanded Medicaid eligibility and reduced private health insurance premiums will increase the probability of both public and private health insurance coverage while reducing the uninsurance rates among low income childless adults. However, even with expanded eligibility a large portion of individuals remain uninsured. As previously discussed, public health insurance rates remain rather low among those eligible for such coverage. Along with enrollee premium requirements, it is also important to understand and address the non-financial barriers to enrollment, such as program reputation and the stigma associated with public insurance (Ketsche et al., 2007).

This study provides interesting insight into the effect of both public and private health insurance premiums on the eve of health care reform. Under reform, insurance coverage will be significantly expanded among the low income childless adult population, and the costs of coverage will be dramatically altered. While eliminating the historical exclusion of childless adults from Medicaid and providing premium credits for the purchase of private health insurance are important steps in reducing the number of low income uninsured Americans, there is much work left to be done. As evidenced in the study sample,

despite being eligible for public coverage or private insurance subsidies, many individuals remain uninsured. It is clear that intense outreach efforts will be needed to reach out to those eligible for newly expanded coverage. Additionally, a key component of the health care reform act, the individual mandate and the associated financial penalty of remaining uninsured should help in increasing program participation. Along with reduced premiums, these efforts should help achieve high participation rates and ultimately reduce the number of uninsured Americans.

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Table 1: Summary of childless adult health insurance expansions and yearly premiums, 2000-2008

State Program	Income Eligibility	Public Premium Range†	Private Premium Range
Arizona	0-100% FPL	$0	$3312 - $5303
Delaware	0-100% FPL	$0	$3260 - $6078
District of Columbia	0-200% FPL	$0	$3957 - $5408
Hawaii	0-100% FPL	$0	$2737 - $4496
Idaho	0-185% FPL	-	$2092 - $2925‡
Indiana	0-200% FPL	$0 - $1318	$4239 - $5251
Iowa	0-200% FPL	$0 - $1020	$3894 - $4417
Maine	0-300% FPL	$0	$2927 - $5725‡
Maryland	0-116% FPL	$0	$4043 - $4693
Massachusetts	0-400% FPL	$0	$0 - $5110‡
Michigan	0-35% FPL	$0	$4126 - $5099
Minnesota	0-200% FPL	$0-$1173	$3134 - $4777
New Mexico	0-200% FPL	-	$0 - $1410‡
New York	0-100% FPL	$0	$3352 - $5697
Oklahoma	0-200% FPL	-	$1400 - $2023‡
Oregon	0-185% FPL	$0 - $300	$141 - $5659‡
Pennsylvania	0-200% FPL	$410 - $429	$3855 - $5153
Utah	0-150% FPL	$17 - $59	$3152 - $4740
Vermont	0-300% FPL	$0 - $1620	$3279 - $5248
Washington	0-200% FPL	$110 - $2640	$3033 - $4826

Notes: Eligibility and benefits determined using Centers for Medicare and Medicaid (CMS) fact sheets, State Coverage Initiatives, and program websites. Premium amounts are adjusted using the Consumer Price Index (CPI) to 2008 dollars, and rounded to the nearest dollar.
† Values only available for states with public insurance expansions.
‡ Indicates state has premium assistance program.

Table 2: Descriptive statistics of childless adult sample pooled across states and years, 2000-2008

Variable	Public Coverage Eligible	Premium Assistance Eligible
Insurance Status		
Insured	63.67	57.51
Public Coverage	17.62	-
Private Coverage	46.05	-
Uninsured	36.33	42.49
Public Premium	$163	-
Private Premium	$4,317	$1,428
Individual Characteristics		
Age	32.97	34.41
Female	49.23	45.87
Black	16.80	4.82
Other Race	11.21	9.08
Hispanic	14.40	22.56
Citizen	87.71	86.80
Health Status: Excellent/Very Good	58.19	61.33
Health Status: Fair/Poor	16.25	11.69
Married	12.12	17.65
Household Characteristics		
Full time, full year worker	13.82	33.53
Full time, part year worker	15.48	21.89
Part time worker	26.06	28.13
College Graduate	17.62	20.19
Some College	29.37	28.59
High School Graduate	33.27	33.29
Income	$6,221	$13,365
Number of observations	28,926	4,295

Source: Tabulations of the 2000-2008 Current Population Survey (CPS) March supplement.

Table 3: Regression coefficients: The effect of premium levels on insurance status of childless adults eligible for public health insurance expansion programs

	Private vs. Public Insurance	Uninsured vs. Public Insurance
Public Premium	0.0009 (0.0003)***	0.0010 (0.0002)***
Private Premium	-0.0002 (0.0001)**	-0.0000 (0.0001)
Age	-0.0116 (0.0021)***	0.0032 (0.0017)*
Female	-0.1274 (0.0394)***	-0.4450 (0.0426)***
Black	-0.7660 (0.0706)***	-0.2231 (0.0606)***
Other Race	-0.2564 (0.1475)*	-0.0051 (0.1319)
Hispanic	-0.9384 (0.0963)***	-0.1463 (0.0942)
Citizen	-0.1357 (0.0851)	-0.8776 (0.0853)***
Health Status: Excellent/Very Good	0.8604 (0.0598)***	0.4586 (0.0615)***
Health Status: Fair/Poor	-1.0241 (0.0614)***	-0.9932 (0.0631)***
Household: Full Time, Full Year Worker	1.8911 (0.1001)***	1.8954 (0.1001)***
Household: Full Time, Part Year Worker	1.1105 (0.0812)***	1.2524 (0.0797)***
Household: Part Time Worker	0.9398 (0.0668)***	0.6927 (0.0676)***
Married	0.6876 (0.1005)***	0.3630 (0.0927)***
Household: High School Graduate	0.5501 (0.0562)***	0.3424 (0.0480)***
Household: Some College	1.4603 (0.0646***	0.4099 (0.0573)***
Household: College Graduate	1.4603 (0.0775)***	0.8102 (0.0652)***
Household Income	-0.0000 (0.0000)***	-0.0001 (0.0000)***
Unemployment Rate	-4.1782 (1.3420)***	-1.1144 (1.5691)

All regressions include state and year dummies.
Standard errors are corrected for clustering by state/year.
*** Significant at $p<0.01$.
** Significant at $p<0.05$.
* Significant at $p<0.10$.

Table 4: Regression coefficients: The effect of premium levels on insurance status of childless adults eligible for premium assistance programs

	Uninsured vs. Insured
Public Premium	---
Private Premium	0.0002 (0.0001)**
Age	0.0068 (0.0036)*
Female	-0.4304 (0.0546)***
Black	0.2229 (0.1750)
Other Race	0.3548 (0.2720)
Hispanic	0.3262 (0.1117)***
Citizen	-0.6823 (0.1429)***
Health Status: Excellent/Very Good	-0.3637 (0.0767)***
Health Status: Fair/Poor	-0.4976 (0.1238)***
Household: Full Time, Full Year Worker	0.3902 (0.1524)***
Household: Full Time, Part Year Worker	0.3832 (0.1461)***
Household: Part Time Worker	0.1614 (0.1478)
Married	-0.1633 (0.1396)
Household: High School Graduate	-0.2034 (0.0989)**
Household: Some College	-0.8108 (0.0964)***
Household: College Graduate	-0.5711 (0.1497)***
Household Income	-0.0000 (0.0000)***
Unemployment Rate	1.5641 (2.5821)

All regressions include state and year dummies.
Standard errors are corrected for clustering by state/year.
*** Significant at $p<0.01$.
** Significant at $p<0.05$.
* Significant at $p<0.10$.

Table 5: Simulated changes in health insurance status of eligible low income childless under PPACA premium levels

Public Insurance Eligible	Public (%)	Private (%)	Uninsured (%)
Baseline	18.34	48.61	33.05
PPACA Levels†	18.66 (+1.71%)	50.25 (+3.26%)	31.09 (-5.93%)

Premium Assistance Eligible	Uninsured (%)
Baseline	37.02
PPACA Levels‡	31.63 (-14.56%)

Notes: Non-citizens excluded from PPACA simulations. Number in parenthesis is the change in the predicted probability from baseline.
† 0-133% FPL: Medicaid with no premium. Private premiums are set on a sliding scale, ranging from 4.0%-9.5% of income.
‡ This model only includes those above 133% FPL. Private premiums are set on a sliding scale, ranging from 4.0%-9.5% of income.

Table 6: Simulation results applied to all childless adults under 400% FPL in expansion states

	Baseline	PPACA Premium Levels	Newly Insured
0-133% FPL†	33.78	31.77	149,607
133-400% FPL‡	21.25	18.16	357,998
0-400% FPL	26.16	23.50	507,605

Notes: Baseline uninsurance rates obtained from 2008 Current Population Survey (CPS) data. Non-citizens excluded from PPACA models.

† 0-133% FPL: Public premiums set to zero.

‡ Private premiums set on a sliding scale, ranging from 4.0-9.5% of income.

CHAPTER 3

Public Health Insurance Eligibility and Labor Force Participation of Low Income Childless Adults

Abstract

This paper exploits state level childless adult public health insurance expansions to provide evidence on the labor force participation effects of expanding public health insurance coverage. Using data from the March supplement to the Current Population Survey (CPS) from 1998-2008, difference-in-difference multinomial logistic regression modeling is used to compare labor force participation among low income childless adults eligible for public health insurance expansions to those not eligible for such expansions. Results from this analysis find no effect of public insurance availability on leaving work and full-time employment; however the analysis does find a 4.1 percentage point increase in the probability of part-time employment. The results from this analysis provide important insights into the potential effect of public health expansions on labor market participation.

Introduction

Employment based health insurance is the most prevalent form of health insurance in the United States. In 2007, 62 percent of the non-elderly population had employment based health insurance (Fronstin, 2008). Given the high and variable level of health care costs and strong ties between health insurance and employment, health insurance availability can be a key determinant in labor supply decisions. While public health insurance has generally not been available to non-elderly childless adults, federal policy changes in recent years provided states with more opportunities to expand public insurance coverage. For example, states could expand coverage to adults through 1115 waivers and Health Insurance Flexibility and Accountability (HIFA) waivers, providing either free or heavily subsidized public health insurance to the eligible population.

The aim of this paper is to exploit these childless adult public health insurance expansions and evaluate the behavioral responses on labor force participation, namely, the likelihood of part-time employment, full-time employment and leaving work completely. With newly available public health insurance, labor market participation could be affected in a number of ways. If individuals work full-time with the goal of securing health insurance, publicly provided insurance could induce some individuals to either reduce the number of hours they work, dropping to part-time employment, or leave the labor market entirely. This is because the value of the compensation package, including health insurance, would be reduced for individuals eligible for public insurance leading to a reduction in the supply of labor. Thus, individuals eligible for public health insurance programs may have a higher probability of working part-time and a higher probability of leaving the labor force, relative to working full-time.

With recent passage of the Patient Protection and Affordable Care Act (PPACA), Medicaid will be expanded to all citizens less than 133 percent of the federal poverty level, unrelated to work status. Given this policy change, it is important to have an understanding of how these expansions may affect the labor supply behavior of the newly eligible population.

Background

The impact of public health insurance on labor market participation is theoretically ambiguous. When a worker receives an income transfer in the form of public health insurance coverage, without an offsetting change in wages, economic theory would suggest that on average labor would decrease. Thus, the inherent reduction in labor force participation may increase the likelihood of part-time employment or leaving employment completely. While public health insurance availability may lead to reductions in labor force participation, it may also lead to other important implications, adding to the theoretical complexity. By improving the health of the newly eligible population, public health insurance can lead to increased employment and worker productivity. Evidence of this effect has been demonstrated in Canada, in which employment increased following the implementation of national health insurance (Gruber and Hanratty, 1995). In addition to increasing labor supply, public health insurance availability also has the potential to reduce "job-lock". That is, the availability of health insurance not tied to employment allows individuals to change jobs without fear of losing their health insurance. It has been shown that state laws mandating continued access to employer provided health insurance for the non-employed resulted in increased job switching among those eligible for such benefits (Gruber and Madrian, 1995, 1997). The authors suggest that these mandates may increase worker

productivity by providing the worker with a more productive job search and the ability to find a higher paying job.

Given the theoretical ambiguity regarding the impact of public health insurance on labor supply it is not surprising that findings in the empirical literature are mixed. For example, the literature on the effect of Medicaid on labor supply suggests that Medicaid has either no effect or a very small effect on the labor force participation of low income single mothers. Since Medicaid participation has historically been collinear with public assistance participation, studies have had to confront the issue of identifying the marginal impact of Medicaid on labor supply. One such approach is to exploit the variation in the generosity of state Medicaid programs to identify the value of Medicaid to potential recipients (Blank, 1989; Montgomery and Navin, 2000; Winkler, 1991). Blank (1989) finds no effect of the value of Medicaid coverage on labor market behaviors. However, Winkler (1991) finds small but statistically significant negative effects of Medicaid on labor force participation. Montgomery and Navin (2000) find that the effects of Medicaid are sensitive to the treatment of state effects. Moffitt and Wolfe (1992) take a different approach using a family specific measure of Medicaid value based on expected medical spending, and find that increased Medicaid benefits led to lower rates of labor force participation. Several studies have attempted to exploit a series of legislative initiatives severing the link between Medicaid and welfare participation as a way to indentify the effect of Medicaid coverage on labor force participation. Yelowitz (1995) finds that expansions in Medicaid eligibility led to a small increase in the labor force participation of single women. However, Meyer and Rosenbaum (2000) find that the labor force participation effects are driven entirely by AFDC, and not Medicaid expansions. Ham and Shore-Sheppard (2005) reexamine the evidence presented by Yelowitz (1995) and find no effect of Medicaid expansions on labor force participation.

A number of studies in the literature examine the impact of retiree health insurance on labor force participation, consistently finding that individuals with access to retiree health insurance leave the labor force earlier than individuals without such coverage. However, many of these studies have suffered from the potential endogeneity between retiree health insurance availability and pension incentives associated with retirement and preferences for leisure (Karoly and Rogowski, 1994; Madrian et al., 1994; Rogowski and Karoly, 2000). Two approaches have been taken in the literature to deal with these potential simultaneity issues. One such approach is to develop a structural model of retirement decisions. For example, Gustman and Steinmeier (1994) estimate a model that incorporates both pension and health insurance retirement incentives, and find that retiree health insurance reduces the age at retirement by approximately 1.3 months. Taking a similar approach, Rust and Phelan (1997) estimate that retiree health insurance increases the probability of retiring before age 65 by 12-29 percent. Blau and Gilleskie (2001) find that the availability of retiree health insurance increases exits from employment by 2-6 percentage points per year. Another approach to deal with the potential simultaneity is to find variation in insurance availability after retirement that is exogenous to retirement preferences. Gruber and Madrian (1995) use this approach to examine the effect of the Consolidated Omnibus Budget Reconciliation Act (COBRA) on retirement. They find a 30 percent increase in the probability of retiring among those eligible for COBRA benefits, relative to those not eligible for such benefits. Additionally, Boyle and Lahey (2010) exploit the expansion of the Veterans Affairs health care system, and find that the expansion of coverage resulted in reductions in full-time work and increases in both part-time work and non-work.

Evidence regarding the effect of Medicare eligibility on retirement is limited. In theory, Medicare eligibility should provide a strong retirement incentive for individuals

without access to retiree health insurance. However, the identification of the Medicare effect on retirement is difficult due to Medicare eligibility coinciding with the social security retirement age. Much of the literature examining the impact of Medicare on labor force participation uses either dynamic programming or structural models, finding that Medicare increases retirement (Rust and Phelan, 1997; Johnson et al., 2003; Madrian and Beaulieu, 1998; French and Jones, 2007). In contrast to these findings, Lumsdiane and coauthors (1994) incorporate the value of Medicare in their structural model of retirement and find little effect of Medicare on retirement decisions.

Although most of the research on labor force participation has focused on older workers and welfare recipients, a number of studies have examined the labor supply of married couples. Identification of the effect of labor supply comes from comparing labor force participation and hours worked of married women whose spouses have employer sponsored coverage with women whose spouses do not have such coverage. Identification rests on the assumption that a husband's employer sponsored insurance is exogenous to a woman's labor market participation decisions. Findings suggest that married women with health insurance through their spouse are 6-20 percentage points less likely to work than women without such coverage (Buchmueller and Valletta, 1999; Olson, 1998; Schone and Vistnes, 2000; Wellington and Cobb-Clark, 2000). Additionally, these studies find that women with spousal insurance are less likely to work full-time jobs and jobs offering health insurance, while they are more likely to work part-time jobs and fewer hours. Using data from Taiwan, Chou and Staiger (2001) examine the effects of health insurance on labor force participation of spouses. The authors were able to identify the effect of health insurance through exploiting the availability of dependent health insurance coverage through the implementation of a new National Health Insurance program. The authors find that the

availability of insurance for non-workers was associated with a four percentage point decrease in labor force participation among married women.

The natural experiments provided by state level public health insurance expansions provide an excellent opportunity to build upon the current literature and further examine the effect of health insurance on labor force participation. Exploiting the state level childless adult public health insurance expansions provides a relatively clean source for identifying the effect of health insurance on labor force participation. Unlike many previous studies the source of identification is independent of omitted personal characteristics that may be correlated with post employment health insurance and incentives to alter labor force participation behavior. The source of identification is also independent of omitted job characteristics and pension plan availability that may be correlated with employer provided coverage and post employment insurance.

Methods

Data

The primary data source for this analysis is the March annual demographic supplement to the Current Population Survey (CPS) for the years 1998-2008. The March supplement to the CPS provides a large database with detailed demographic, employment, and health insurance information. Detailed information on family structure, household income, and state identifiers make it possible to impute eligibility for the childless adult public health insurance expansions given each states eligibility criteria. In addition to information on labor force status in the current year, the CPS includes information on labor force participation and job characteristics in the previous year, allowing for the examination of labor force participation over a one year period. Similar to previous studies, the sample is

limited to individuals who report working at least one week in the previous year (Gruber and Madrian, 1995). With detailed information on labor participation status it is possible to examine a multinomial dependent variable examining the likelihood of being out of work, employed part-time, and employed full-time.

The sample is limited to childless adults age 19-64 with family incomes at or below 133 percent of the FPL. Further exclusions include pregnant women and individuals reporting coverage through Medicare or TRICARE, as they may have access to other forms of public health insurance. Also excluded are non-citizens, as they may not be eligible for state programs. Additionally, exclusion of this population allows the results to be more applicable to the expected effect of PPACA, as non-citizens will be excluded from expanded Medicaid eligibility. Study states are limited to states that implemented public health insurance programs unrelated to employment during the study period. State expansion programs included in this analysis are identified in Table 1. The final sample of the core model consists of 53,152 childless adults at or below 133 percent of the federal poverty level. In addition to the core analysis, two separate analyses stratified by employer sponsored health insurance availability are examined. One analysis includes only individuals reporting coverage through employer sponsored health insurance in the previous year, while the second analysis includes only individuals without employer sponsored health insurance in the previous year.

Multivariate Analysis

When examining the effect of the insurance expansions on labor force participation, it is important to consider the possibility of biased estimates due to self selection and unobserved heterogeneity. This problem can be mitigated through the use of difference-in-

difference modeling. With a difference-in-difference model, changes in the outcomes from the control group are subtracted from those of the treatment group, controlling for any group-specific and time-specific effects that may have affected labor force participation during the study years (Wooldridge, 2002). The treatment group includes childless adults eligible for the public insurance coverage expansions, while the control group consists of childless adults at or below 133 percent of the federal poverty level in states without childless adult public insurance expansions. In addition to the use of a control group, a rich set of covariates are included in the model to control for the different characteristics between the treatment and control groups across the study period. Labor force participation is a function of the individual's eligibility for coverage, demographic and social characteristics, employment characteristics, and local area characteristics. The multinomial logistic regression model has the following specification:

$$LFP_{ijt} = \beta_0 + \beta_1 Post_{ijt} + \beta_2 Eligible_{ij} + \beta_3 Post*Eligible_{ijt} + \beta_4 X_{ijt} + \gamma STATE_j + \theta YEAR_t + \varepsilon_{ijt}$$

where the subscripts *i*, *j*, and *t* stand for the *i*th individual in the *j*th state in the *t*th time period. LFP_{ijt} is a multinomial variable coded as out of work if the individual is not employed at the time of the survey, part-time if employed and working less than 35 hours per week at the time of the survey, and full-time if employed and working 35 hours or more per week at the time of the survey. $Post_{ijt}$ is an indicator of whether the observation is in the post expansion period. $Eligible_{ij}$ indicates whether an individual is eligible for the expansion. The primary variables of interest in this model $Post*Eligible_{ijt}$; the interaction term of time difference (pre/post) and group difference (treatment/control), represents the effect of public health insurance eligibility on labor force participation. The vector X_i contains a set of individual demographic and employment characteristics, as well as local area characteristics

including: age, gender, race/ethnicity, marital status, employer sponsored health insurance availability, pension availability, non-wage and wage income in the previous year, and industry and occupation controls from the longest job held in the previous year. A full set of state and year fixed effects are also included in the model to account for trends and differences across states not related to the expansions. The models are identified by variation in program eligibility across several dimensions, cross-state variation in the timing of expansion implementation, as well as cross-state and within-state variation over time in the income eligibility criteria for the expansion programs. Such differences in eligibility provide plausibly exogenous variation that can be used to identify the effects of the expansions on labor force participation.

The estimation approach will not produce unbiased estimates if state decisions concerning health insurance expansions were based on anticipated state-specific trends. For example, at the time of implementation states expecting strong economic growth may provide more generous expansions than states with weaker expected growth. To address the potential problem of policy endogeneity in the models, state level unemployment rates in years t and t-1, and state level per capita income in years t and t-1 are included. These policy relevant variables vary across state and over time, and should capture the effect of potentially confounding state-specific trends.

The multinomial logistic regression models were run in *Stata* version 10.1. The marginal effects of each of the explanatory variables on the dependent variable are reported. The marginal effect of each explanatory variable on labor force participation can be interpreted as the percentage point change in the probability associated with a one unit change in the explanatory variables.

Results

Descriptive statistics of the low income childless adult sample pooled over the 1998-2008 time period are shown in Table 2. The first column includes childless adults eligible for insurance expansions, while the second column includes characteristics of the control group; childless adults up to 133% FPL in states without expansion programs. As shown, the demographic characteristics between the eligible childless adults sample are very similar to those in the control group. For example, the average age, proportion female, highest education level, and health status are similar across the two groups.

Table 3 displays the results from the multinomial logistic regression model examining the effect of the expansions on the probability of leaving work, working full-time, and working part-time. The table presents the marginal effects of the main variables of interest as well as several covariates included in the model. As indicated in the first column of Table 3, there is no statistically significant effect of public health insurance eligibility on the likelihood of leaving work. Covariates included in the model are in the expected direction, for example, individuals with higher levels of education are less likely to leave employment, and those with in poorer health and higher non-wage income are more likely to leave employment, while those with higher wage income are less likely to leave. As shown in the second column of Table 3, there is also no statistically significant effect of public health insurance eligibility on the likelihood working full-time. Covariates included in the model are in the expected direction; those in better health, higher education levels, and those with employer sponsored health insurance are more likely to be employed full-time.

Although no statistically significant effects were found regarding the relationship between public health insurance eligibility and the likelihood of full-time employment and the likelihood of leaving work, public health insurance eligibility significantly increased the

probability of working part-time. The third column of Table 3 provides the multinomial logistic regression results examining the effect of program eligibility on part-time employment. As shown, childless adults eligible for public health insurance expansions had a 4.1 percentage point increased probability of working part-time. Covariate estimates are presented for several covariates included in the model and are in the expected direction. For example those with employer sponsored insurance, and a pension are less likely to report working part-time.

Table 4 presents the results from the multinomial logistic regression model on the sample of childless adults that had employer sponsored health insurance in the previous year. As indicated in the table, public health insurance eligibility is associated with a decreased likelihood of leaving employment of 4.7 percentage points, a reduced likelihood of working full-time of 9.4 percentage points, an increased likelihood of part-time employment of 14.1 percentage points. As with the previous model, covariates included in the model are also displayed in the table and are in the expected direction. Table 5 displays the results of the same analysis with a sample of childless adults restricted to those without employer sponsored health insurance in the previous year. This analysis finds no statistically significant effect regarding the relationship between public health insurance eligibility on the likelihood of leaving work, working part-time, and working full-time.

Limitations and Sensitivity Analysis

While this study provides interesting insight into the effect of public health insurance on labor market participation, it is also subject to certain limitations. First, the study only includes low income childless adults, and the results are not likely generalizable to the population as a whole. Another issue is that difference-in-difference results could be

substantially affected by the choice of control group (Marquis and Long, 2003). However, to test the robustness of the results multiple control groups were employed. The same analysis as presented here was conducted using a control group of low-income childless adults restricted to states with childless adult insurance expansions. The models are also examined including non-citizens, as some state programs do not factor citizenship status into eligibility determination. Additionally, analysis was conducted in which the definition of those working in the previous year is altered to include those who worked more than 10 weeks in the previous year. The results from the alternative model specifications are the same as those found in the core model providing support for the robustness of the findings by choice of control group and inclusion criteria.

Discussion

This study exploited the time variation in expansion program implementation and state variation in eligibility levels to assess the impact of childless adult public health insurance expansions on labor market participation. These health insurance expansions provided a quasi-experimental design as childless adults were eligible for coverage at different times over the study period, while childless adults residing in some states were not eligible for such expansions. Results from the full sample model indicates that childless adult expansion eligibility led to an increased likelihood of part-time employment. There were either changes that were not statistically significant or no change that could be measured with the employed methods regarding the relationship between public health insurance eligibility and the likelihood of leaving work and full-time employment.

There is additional evidence in the literature supporting the findings that health insurance availability unrelated to employment increases the likelihood of part-time

employment. For example, it has been shown that men with health insurance not reliant on continued employment are less likely to work full-time and more likely to work part-time (Rust and Phelan, 1997). It has also been demonstrated that spousal health insurance reduces the probability of working full-time and increases the probability of working part-time in the range of 2.0 to 3.3 percentage points (Buchmueller and Valletta, 1999; Schone and Vistnes, 2000). Additionally, it has been shown that health insurance offered through the Veterans Affairs health care system resulted in an increase in the probability of working part-time of 0.89 percentage points among those eligible for such benefits (Boyle and Lahey, 2010).

There are many possible contributing factors which could lead to the 4.1 percentage point increase in part-time employment found in the analysis among those eligible for public health insurance coverage. One such possibility may be explained by the differential availability of employer sponsored health insurance among full-time and part-time employees. Employers seldom offer health insurance to part-time employees, typically only offering coverage to full-time employees. According to the U.S. Bureau of Labor Statistics (BLS), 86 percent of full-time workers have access to health insurance benefits, while only 24 percent of part-time workers have access to such benefits (U.S. Bureau of Labor Statisitics, 2010). Thus, some employees who would otherwise work part-time may be working full-time in order to acquire health insurance coverage. However, once public health insurance unrelated to employment becomes available it is possible that employees switch to part-time work as they no longer require the health insurance benefits associated with full-time employment. Another possibility is that individuals work part-time in an effort to avoid increasing their income enough to lose public health insurance coverage. By working part-time individuals would be able to keep their income below the income eligibility threshold and remain eligible for public insurance. Additionally, the availability of public health

insurance may impact the nature of the transition out of the labor force. It may be the case that once individuals become eligible for public health insurance they move from full-time employment to part-time employment, making a gradual withdrawal from the labor force. It may be the case that individuals are using part-time employment as a bridge job, an important intermediate step in the labor force withdrawal process of many individuals (Quinn and Kozy, 1996). Given public health insurance availability individuals can make this transition to part-time employment without losing their health insurance coverage.

The findings from the models stratified by employer sponsored health insurance coverage provide additional insight into the increased likelihood of part-time employment found among those eligible for public insurance. If it is the case that individuals are more likely to work part-time once eligible for public health insurance it is expected that this behavior would be predominately found among those with previous health insurance coverage through their employer. The results from the stratified analyses indeed support this notion, as the analysis comprised of those with employer sponsored health insurance in the previous year finds a higher degree of magnitude in the likelihood of part-time employment, while no statistically significant effect is found among those without previous employer sponsored insurance. This would indicate that the effects are primarily found among individuals with a previous attachment to the workplace through employer sponsored insurance.

Overall, the findings imply that policies to provide public health insurance coverage could lead to increases in part-time employment among the newly eligible population. The results demonstrate that childless adult public health insurance eligibility has led to increases in part-time employment. Although not statistically significant, the expansions also appear to reduce the likelihood of leaving work and working full-time. These results have important

implications of the potential labor market effects of the Patient Protection and Affordable Care Act (PPACA). Under PPACA, Medicaid coverage will be expanded to all citizens, including childless adults, up to 133 percent of the federal poverty level. The findings here indicate that increased public health insurance eligibility may lead to an increase in part-time employment among the newly eligible population. It is clear that more research is needed to examine the nature of this increase in part-time employment resulting from public health insurance eligibility.

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Table 1: Summary of childless adult health insurance expansions

State Program	Year Implemented	Income Eligibility
Arizona HIFA	2001	≤ 100% FPL
District of Columbia Healthcare Alliance Program	2001	≤ 200% FPL
Healthy Indiana	2008	≤ 200% FPL
IowaCare	2005	≤ 200% FPL
MaineCare for Childless Adults	2002	≤ 100% FPL
Maryland Primary Adult Care Program	2006	≤ 116% FPL
Michigan Adults Benefit Waiver	2004	≤ 35% FPL
New Mexico State Coverage Insurance	2005	≤ 200% FPL
New York Family Health Plus	2001	≤ 100% FPL
Pennsylvania adultBasic	2002	≤ 200% FPL
Utah Primary Care Network	2002	≤ 150% FPL

Notes: FPL is federal poverty level. Program eligibility and benefits determined using Centers for Medicare and Medicaid Services (CMS) fact sheets, State Coverage Initiatives (SCI), and program websites.

Table 2: Descriptive statistics of childless adults sample, 1998-2008

Variable	Expansion Program Eligible	Control Sample
Out of Work	32.98 (47.02)	28.57 (45.17)
Part-time	33.05 (47.04)	31.85 (46.59)
Full-time	33.97 (47.36)	39.59 (48.90)
Age	28.76 (12.46)	29.31 (12.85)
Female	48.95 (49.99)	48.63 (49.98)
Black	17.21 (37.75)	15.37 (36.07)
Hispanic	11.45 (31.84)	14.72 (35.44)
Other Race	4.24 (29.15)	5.03 (21.87)
Married	5.03 (21.86)	6.53 (24.71)
Separated	11.05 (31.36)	12.96 (33.58)
HS Graduate	31.37 (46.40)	33.07 (47.05)
Some College	38.65 (48.70)	37.82 (48.49)
College Grad	15.81 (36.48)	13.45 (34.12)
Wage Income (thousands)	5.49 (3.76)	6.71 (4.16)
Non-wage Income (thousands)	0.95 (2.15)	1.04 (2.31)
Excellent Health	35.85 (47.96)	34.98 (47.69)
Very Good Health	30.99 (46.25)	30.80 (46.17)
Fair/Poor Health	9.01 (28.64)	9.06 (28.71)
Urban	81.17 (39.10)	77.25 (41.92)
ESI	43.06 (49.52)	41.12 (49.21)
Spouse ESI	1.74 (13.10)	1.99 (13.96)
Pension	6.61 (24.84)	7.08 (25.65)
Student	34.69 (47.60)	32.99 (47.02)
Occupation		
Prof/Management	13.71 (34.40)	11.24 (31.59)
Tech/Sales/Cleric	31.63 (46.51)	31.23 (46.34)
Production	12.24 (32.78)	10.94 (31.21)
Operator	8.09 (27.28)	12.74 (33.34)
Farming	1.26 (11.17)	2.77 (16.42)
Service	33.05 (47.04)	31.08 (46.28)
Industry		
Agricultural/Mining	1.89 (13.60)	3.18 (17.54)
Construction	6.28 (24.26)	6.79 (25.16)
Manufacturing	4.98 (21.76)	6.26 (24.23)
Transport/Comm.	4.91 (21.61)	4.49 (20.72)
Trade	21.50 (41.08)	28.57 (45.18)
Finance	3.55 (18.49)	3.12 (17.37)
Public	1.78 (13.23)	1.43 (11.87)
Service	55.12 (49.74)	46.15 (49.85)
Number of observations	5,782	47,370

Source: Tabulations of the 1998-2008 Current Population Survey (CPS) March supplement.

Table 3: The marginal effect of expansion program eligibility on labor market participation

Variable	Out of Work	Full-time	Part-time
Post	0.009 (0.020)	0.021 (0.021)	-0.030 (0.019)
Eligible	-0.018 (0.018)	0.024 (0.020)	-0.006 (0.019)
Post*Eligible	-0.017 (0.021)	-0.025 (0.022)	0.041 (0.022)*
Age	-0.002 (0.000)***	-0.001 (0.000)***	0.003 (0.000)***
Female	-0.028 (0.005)***	-0.037 (0.005)***	0.065 (0.005)***
Black	0.060 (0.007)***	-0.005 (0.007)	-0.055 (0.007)***
Hispanic	-0.012 (0.007)*	0.022 (0.008)***	-0.010 (0.007)
Other Race	0.084 (0.011)***	-0.044 (0.011)***	-0.040 (0.010)***
Married	0.014 (0.013)	0.033 (0.013)***	-0.047 (0.012)***
Separated	0.019 (0.008)**	0.037 (0.008)***	-0.056 (0.008)***
HS Graduate	-0.042 (0.006)***	0.035 (0.007)	0.007 (0.007)
Some College	-0.048 (0.007)***	0.025 (0.008)***	0.024 (0.008)***
College Grad	-0.070 (0.008)***	0.091 (0.009)***	-0.022 (0.009)**
Wage Income	-0.030 (0.001)***	0.024 (0.001)***	0.006 (0.001)***
Non-wage Income	0.007 (0.001)***	-0.011 (0.001)***	0.004 (0.001)***
Excellent Health	-0.010 (0.006)	0.016 (0.006)**	-0.006 (0.006)
Very Good Health	-0.024 (0.006)***	0.016 (0.006)***	0.008 (0.006)
Fair/Poor Health	0.117 (0.009)***	-0.093 (0.008)***	-0.024 (0.009)***
Urban	0.002 (0.006)	-0.001 (0.006)	-0.001 (0.006)
ESI	-0.034 (0.005)***	0.052 (0.005)***	-0.018 (0.005)***
Spouse ESI	0.012 (0.023)	0.017 (0.021)	-0.030 (0.021)
Pension	-0.082 (0.009)***	0.141 (0.010)***	-0.059 (0.009)***
Student	0.102 (0.006)***	-0.360 (0.005)***	0.258 (0.007)***

Notes: Regression also includes: 6 occupation dummies, 8 industries dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1, and state and year dummies.

* Significant at $p<0.10$.

** Significant at $p<0.05$.

*** Significant at $p<0.01$.

Table 4: The marginal effect of expansion program eligibility on labor market participation among those with employer sponsored coverage in the previous year

Variable	Out of Work	Full-time	Part-time
Post	0.011 (0.029)	0.088 (0.033)***	-0.100 (0.028)***
Eligible	-0.016 (0.027)	0.069 (0.032)**	-0.052 (0.029)*
Post*Eligible	-0.047 (0.028)*	-0.094 (0.030)***	0.141 (0.035)***
Age	0.000 (0.001)	-0.001 (0.000)***	0.001 (0.001)**
Female	-0.041 (0.007)***	-0.032 (0.008)***	0.073 (0.008)***
Black	0.029 (0.012)**	0.018 (0.012)	-0.047 (0.012)***
Hispanic	-0.029 (0.012)**	0.039 (0.013)***	-0.010 (0.013)
Other Race	0.040 (0.020)**	-0.013 (0.020)	-0.027 (0.020)
Married	0.020 (0.049)	0.079 (0.043)*	-0.100 (0.046)**
Separated	0.001 (0.018)	0.069 (0.017)***	-0.070 (0.019)***
HS Graduate	-0.029 (0.013)**	0.029 (0.014)**	0.001 (0.015)
Some College	-0.023 (0.013)*	0.016 (0.014)	0.007 (0.015)
College Grad	-0.054 (0.014)***	0.107 (0.017)***	-0.053 (0.017)***
Wage Income	-0.037 (0.001)***	0.025 (0.001)***	0.012 (0.001)***
Non-wage Income	0.005 (0.001)***	-0.007 (0.002)*	0.002 (0.002)
Excellent Health	-0.026 (0.008)***	0.029 (0.009)***	-0.003 (0.008)
Very Good Health	-0.029 (0.006)***	0.023 (0.007)***	0.006 (0.007)
Fair/Poor Health	0.091 (0.021)***	-0.047 (0.017)***	-0.045 (0.021)**
Urban	0.002 (0.009)	-0.006 (0.011)	0.004 (0.010)
Spouse ESI	-0.010 (0.050)	-0.046 (0.038)	0.056 (0.057)
Pension	-0.051 (0.012)***	0.130 (0.013)***	-0.079 (0.013)***
Student	0.139 (0.009)***	-0.427 (0.009)***	0.287 (0.010)***

Notes: All regressions include 6 occupation dummies, 8 industries dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1, and state and year dummies.

* Significant at $p<0.10$.

** Significant at $p<0.05$.

*** Significant at $p<0.01$.

Table 5: The marginal effect of expansion program eligibility on labor market participation among those without employer sponsored coverage in the previous year

Variable	Out of Work	Full-time	Part-time
Post	0.000 (0.026)	-0.022 (0.027)	0.021 (0.025)
Eligible	-0.019 (0.024)	-0.008 (0.027)	0.027 (0.025)
Post*Eligible	0.006 (0.029)	0.023 (0.031)	-0.029 (0.026)
Age	-0.002 (0.000)***	-0.001 (0.000)***	0.003 (0.000)***
Female	-0.017 (0.006)***	-0.045 (0.007)***	0.062 (0.006)***
Black	0.079 (0.009)***	-0.024 (0.008)***	-0.056 (0.008)***
Hispanic	0.001 (0.009)	0.007 (0.009)	-0.008 (0.008)
Other Race	0.106 (0.013)***	-0.061 (0.013)***	-0.045 (0.011)***
Married	0.007 (0.014)	0.038 (0.014)***	-0.045 (0.012)***
Separated	0.023 (0.009)**	0.028 (0.009)***	-0.050 (0.008)***
HS Graduate	-0.047 (0.007)***	0.039 (0.008)***	0.008 (0.008)
Some College	-0.066 (0.008)***	0.034 (0.010)***	0.032 (0.009)***
College Grad	-0.076 (0.009)***	0.081 (0.011)***	-0.005 (0.010)
Wage Income	-0.027 (0.001)***	0.024 (0.001)***	0.003 (0.001)***
Non-wage Income	0.009 (0.001)***	-0.015 (0.002)***	0.006 (0.001)***
Excellent Health	-0.049 (0.007)***	0.049 (0.008)***	-0.000 (0.007)
Very Good Health	-0.051 (0.006)***	0.042 (0.007)***	0.009 (0.007)
Fair/Poor Health	0.081 (0.017)***	-0.046 (0.014)***	-0.032 (0.014)**
Urban	0.002 (0.007)	0.002 (0.008)	-0.004 (0.007)
Spouse ESI	-0.014 (0.062)	-0.012 (0.062)	0.027 (0.062)
Pension	-0.089 (0.013)***	0.113 (0.016)***	-0.023 (0.014)*
Student	0.059 (0.009)***	-0.288 (0.007)***	0.229 (0.009)***

Notes: All regressions include 6 occupation dummies, 8 industries dummies, state unemployment rate in years t and t-1, state per capita income in years t and t-1, and state and year dummies.

* Significant at $p<0.10$.

** Significant at $p<0.05$.

*** Significant at $p<0.01$.