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Laboratories of Health:
Determinants of State Health Policies for Vulnerable Populations
and Impacts on Access to Care

By

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Doctor of Philosophy

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Laboratories of Health:
Determinants of State Health Policies for Vulnerable Populations and Impacts on Access to Care

By

Emily M. Johnston
B.A., Tufts University, 2010

Advisor: E. Kathleen Adams, Ph.D.

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

Laboratories of Health:
Determinants of State Health Policies for Vulnerable Populations
and Impacts on Access to Care

By Emily M. Johnston

The federalist structure of the United States government creates challenges and opportunities for ensuring access to health care for all Americans. States can customize health policies within federal standards, resulting in variations in policies, access, and health outcomes across states. This dissertation relies on quasi-experimental state policy variation to examine the effect of public opinion on state public health insurance eligibility policies and the impact of state contraception coverage mandates on unintended births.

In Chapter One, I develop and test a theory of the role of public opinion, measured as state resident ideology, on eligibility expansions for children in Medicaid and the State Children's Health Insurance Program (CHIP) from 1997-2010. I find that increases in liberal state resident ideology lead to expanded eligibility for children, even after controlling for state demographic characteristics, fiscal capacity, Medicaid financing, and party control of state government.

In Chapter Two, I apply the same methods to parental eligibility levels. I then estimate the effect of ideology on the type of program implemented by a state. I find that liberal ideology leads to increased eligibility for parents, and that the effect is larger for parents than for children. Liberal state resident ideology also reduces the likelihood of no expansion and increases the likelihood of the most generous programs: Medicaid without premiums and Medicaid with full benefits.

In Chapter Three, I test the effects of state-level prescription contraception insurance mandates 1996-2012 on pregnancy prevention efforts, problems getting birth control, and unintended births. Mandates decrease the likelihood of unintended birth for individuals and reduce the number of unintended births in a state. These results suggest that the Affordable Care Act (ACA) contraceptive coverage mandate, which is more comprehensive than prior state mandates, may significantly reduce unintended births in the United States.

Together, this research finds that state flexibility in program design has allowed for the translation of the tastes and preferences of state residents into health policy. In turn, these policies have significantly impacted the health of state residents. State variation in health policies will continue as states leverage new opportunities for flexibility offered by the ACA.

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TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

Chapter 2

Chapter 3

LIST OF FIGURES

Chapter 1

Chapter 2

Chapter 3

Chapter 1

Translating Ideology into Health:

Public Opinion and Public Health Insurance Expansions for Children

Background

Health insurance coverage for low-income children in the United States is provided primarily through two public health insurance programs: Medicaid and the State Children's Health Insurance Program (CHIP). Participation in these public health insurance programs has grown substantially over time, with enrollment increasing from 10 million children in 1989 to 30 million children in 2010 (Howell & Kenney, 2012a). This increase more than surpassed growth in the total child population or in the low-income child population and is largely the result of low-income children gaining eligibility for public coverage as states increased income eligibility levels for Medicaid and CHIP. This increase in public coverage is correlated with a decrease in uninsurance: from 1997 to 2012, the uninsured rate for children was cut in half from 14% to 7%.[10] During the same time period, uninsurance among low-income children with family incomes below 200% of the federal poverty level (FPL) declined from 25% to 15% (Paradise, Julia, 2014; Rudowitz, Artiga, & Arguello, 2014). Despite these reductions in uninsured children, 6.2% of all children and 8.6% of children in poverty in the United States were uninsured in 2014 (Smith, Jessica C. & Medalia, Carla, 2015). Moreover, the extent to which uninsurance has been reduced varies significantly from state to state: 2014 uninsurance rates for children ranged from 2% in Maryland to 14% in Oklahoma ("The Kaiser Family Foundation State Health Facts. Data Source: Health Insurance Coverage of Children 0-18," 2016).

Both Medicaid and CHIP are structured as state-federal partnerships in which the federal government sets basic program regulations and provides significant financial support to states. State governments are then able to customize their programs within federal regulations to best match the tastes and preferences of their residents. States have capitalized on this flexibility in program design, resulting in significant variation in Medicaid and CHIP programs between states. This variation is particularly noteworthy for income eligibility levels for children. In 1997, prior to CHIP implementation, 36 states had Medicaid eligibility levels set at the federally mandated level of 100% FPL for children over 6 years old. In the same year, Hawaii covered all children up to 300% FPL in their Medicaid program. By 2012, eligibility levels for children ranged from 160% FPL in North Dakota to 400% FPL in New York.

This variation in eligibility levels, combined with differences in the distribution of income across states, results in tremendous variation in the percentage of children eligible for these public programs in each state (Dubay, Haley, & Kenney, 2002). In turn, these differences in eligibility contribute to differences in access to health care for low-income children, who are disproportionately affected by acute and chronic illness and high health care expenditures (Hakim, Boben, & Bonney, 2000). Previous studies have demonstrated that expanding children's eligibility for public insurance has resulted in increased rates of public insurance, decreased rates of uninsurance, improved access to health care and increased use of health care services for this vulnerable population (Howell & Kenney, 2012b).

Given the established benefits of eligibility expansions for children, it is important to understand the determinants of these state Medicaid and CHIP eligibility policies. A

number of prior studies have analyzed the factors contributing to state Medicaid policies, finding that states with higher fiscal capacity (e.g. median household income) and Democratic party control of state government have more generous Medicaid programs than other states (Bovbjerg, Hadley, Pohl, & Rockmore, 2002; Davidson, 1978; Holahan & Pohl, 2002; S. K. Schneider & Jacoby, 1996; Ullman & Hill, 2001). The majority of these studies contrast the role of politics against the role of economic factors as key determinants of policy outcomes.

State policy-making theory has evolved to reconcile the debate between political and economic determinants by positing that political factors facilitate the relationship between citizen's demands and policies while economic factors constrain policy choices (Dawson & Robinson, 1963; T. R. Dye, 1984; Hofferbert, 1966; Klingman & Lammers, 1984; Miller, 2004; L. L. Orr, 1976; Plotnick & Winters, 1985). The relationship between citizen's demands and policy outcomes was explored by Erikson, Wright, & McIver (1993), who argue that public opinion, measured as ideology, is the dominant influence on policy making in American states (Erikson, Wright, & McIver, 1993). According to their theory, state resident ideology is translated into public policy through the political process. They confirm this theory through a series of state policy analyses, which find that liberal states consistently produce liberal policies (Erikson et al., 1993).

If Medicaid and CHIP program design flexibility is intended to allow states to respond to the tastes and preferences of their residents, then we should expect these preferences to be reflected in Medicaid and CHIP policies. Yet, few studies of Medicaid policy-making have included measures of citizen's preferences, such as public opinion on Medicaid expansion or citizen ideology. Analysis of Medicaid eligibility levels in the

1970s found that a state's political culture, defined by Elazar as a moral, individual, or traditional view of the role of government, was a significant determinant of eligibility levels (Hanson, 1984). When Medicaid policy was measured as program expenditures, however, another study found public opinion to have no impact on program expenditures (Kousser, 2002). Thus, the role of public opinion in state Medicaid and CHIP policymaking is still unknown.

While the majority of health policy studies focus on evaluating the effects of health policies, identifying the determinants of health policy is critical to understanding current policies and identifying opportunities for future policy change. This study adds to the literature by developing and testing a conceptual framework of the role of public opinion, measured as state resident ideology, on state policies setting children's eligibility for Medicaid and CHIP. By focusing specifically on Medicaid and CHIP policy, this framework integrates important subject-matter details with political science theory. I then apply this framework using significant variation in state eligibility levels for children in Medicaid and CHIP from 1997 to 2010. I test the impact of within-state changes in resident ideology on income eligibility levels for children in Medicaid and CHIP, controlling for sociodemographic characteristics, party control of government, Medicaid financing, and fiscal capacity.

Conceptual Framework

I draw from the median voter model, developed by Black, Downs, and others, to create a conceptual framework for the key relationship between state resident ideology and eligibility levels for children in Medicaid and CHIP (Black, 1948; Downs, 1957). Black's theory of group decision-making was extended by Downs and others to describe decision-

making in representative democracies, such as the United States. The model assumes that each party in a democracy sets policies in order to gain votes and win elections and that voters elect parties based on these policy proposals. Ultimately, the median voter will determine the outcome of the election and, thereby, the content of new policies (Downs, 1957). This theory posits a strong effect of the median voter's preferences on policy outcomes (Baumgardner, 1993; Borcherding & Deacon, 1972; Erikson et al., 1993, 1993; Grannemann & Pauly, 2010; L. L. Orr, 1976; Plotnick & Winters, 1985).

Studies applying the median voter model to the determinants of Medicaid expenditures have measured the median voter's preferences as a utility function of median household income and Medicaid program price. These studies consistently found a positive relationship between voter demand and the generosity of these programs (Adams & Wade, 2001; Cromwell, Adamache, Ammering, Bartosch, & Boulis, 1995; Grannemann & Pauly, 2010; L. L. Orr, 1976; Plotnick & Winters, 1985; Wade & Berg, 1995). Rather than characterize the tastes and preferences of the median voter by an individual-level utility function, I focus on aggregate state resident ideology, the same construct found by Erickson, Wright, & McIver (1993) to be the primary determinant of state policy making (Erikson et al., 1993). I describe my measure of ideology in depth in the methods section of this paper.

In this framework, Medicaid policy is measured as income eligibility levels for children in Medicaid and CHIP. This is a strong measure of state policy because it is a specific aspect of program design determined explicitly by state policy makers and captured in state plans and waiver agreements. Alternative measures such as Medicaid expenditures and simulated eligibility do not capture explicit policy choices and are

sensitive to local economic conditions (Baughman & Milyo, 2009; Currie & Gruber, 1995; Hanson, 1984; Plotnick & Winters, 1985).

The conceptual framework in Figure 1 depicts two pathways through which state resident ideology affects state Medicaid policy: a direct effect and an effect through the intervening construct of control of state government. The direct effect of state resident ideology on Medicaid policy measures how responsive an incumbent state government is to changes in state resident preferences. For example, a liberal shift in state resident ideology may lead an incumbent Governor or state legislators to expand Medicaid eligibility. This pathway is particularly important for states in which party control of government has been consistent over time, yet policy change has occurred. This direct effect of state resident ideology on Medicaid policy is the focus of this analysis.

The second pathway, through control of state government, captures the process through which changes in state resident ideology lead to changes in control of state government. These changes in control of state government, in turn, lead to changes in Medicaid policy. For example, a liberal shift in state resident ideology may lead to the election of a Democrat as governor or to the election of more liberal state legislators. These newly elected state officials may then work to expand Medicaid eligibility. This second pathway is controlled for in this analysis, allowing the model to measure the direct effect of state resident ideology on Medicaid policy.

In addition to specifying the relationship between state resident ideology and Medicaid policy, the framework accounts for covariates including sociodemographic characteristics, state fiscal capacity, measures of Medicaid financing, and neighboring states' policies. These measures are expected to co-vary with state resident ideology and

Medicaid policy. Sociodemographic characteristics broadly describe the composition of the state population and include measures specific to the relationship between state resident ideology and Medicaid policy, such as uninsurance rates and the cost of medical care. Fiscal capacity measures a state's ability to generate revenue, an important factor for a state's ability to afford to pay for an expanded Medicaid program. The construct of Medicaid financing captures other factors that impact a state's ability to afford to pay for an expanded Medicaid program including the Federal Medical Assistance Percentage (FMAP), which determines the percentage of a state's Medicaid program costs paid for by the federal government, and current Medicaid program spending.

The construct of yardstick competition captures the idea that a state may evaluate its Medicaid policies relative to the Medicaid eligibility policies of a state's contiguous neighbors (Besley & Case, 2003; Maskin, Qian, & Xu, 2000; Shleifer, Andrei, 1985; Wrede, 2001). States may choose not to expand Medicaid eligibility to avoid an influx of low-income individuals moving to their state to receive welfare benefits (Peterson & Rom, 1990). This "race to the bottom" theory has not, however, been supported by prior Medicaid expansion literature (Baughman & Milyo, 2009). Alternatively, innovation in policy expansions by neighboring states may motivate a state to expand, either by removing uncertainty surrounding innovation or by driving inter-state competition (Berry & Berry, 1990; Volden, 2006). The policies of contiguous states are particularly important because they are likely to share a state's social and political attributes and historical experiences, and because residents may be able to migrate between contiguous states at a relatively low cost (Sharkansky, 1970).

Finally, in addition to the covariates described above, the framework depicts the potential moderating effects of fiscal capacity and Medicaid financing on the relationship between state resident ideology and Medicaid policy (Hanson, 1984; Plotnick & Winters, 1985). An inability of a state to afford expanding a Medicaid program due to low fiscal capacity, high prior year Medicaid costs, or a low FMAP is expected to constrain the effect of liberal state resident ideology on Medicaid eligibility expansions.

Hypotheses

From this conceptual framework modeling the relationship between state resident ideology and state Medicaid policy, I first hypothesize that there is a positive effect of liberal state resident ideology on state eligibility expansions of Medicaid and CHIP for children after controlling for confounding state characteristics and control of state government.

Second, I hypothesize that the relationship between control of state government and Medicaid and CHIP eligibility levels for children is moderated by fiscal capacity and Medicaid financing. Regardless of the policy preferences of state governments, Medicaid eligibility expansion is not possible without allocating additional resources to the program. Lukens documented that states with high expenditures due to intense health care utilization have less generous eligibility policies, possibly due to budget pressure caused by increased overall Medicaid spending (Lukens, 2014). Therefore, I expect that liberal state resident ideology will have a larger effect on Medicaid policy in states with greater fiscal capacity than in states with smaller fiscal capacity and a larger effect in states with a high FMAP and low Medicaid expenditures than in states with low FMAPs and high Medicaid expenditures.

Study Design

Data

This analysis uses a state policy dataset of income eligibility levels for children, measured as a percentage of FPL for each state-year-age combination from 1997-2010. It was assembled using reports from the Kaiser Family Foundation (KFF), the National Governor's Association (NGA), the National Alliance to Advance Adolescent Health, and Families USA, as well as review of state waivers, state reports, state plan amendments, materials from local advocacy organizations, and news reports. These data are supplemented by merging on additional annual state-level aggregate measures from eight sources: the Current Population Survey (CPS) Annual Social and Economic Supplement; the U.S. Department of Treasury; the Office of the Assistant Secretary for Planning and Evaluation (ASPE), Department of Health and Human Services; the Centers for Medicare and Medicaid Services (CMS); the National Association of State Budget Officers (NASBO); and the research of Klarner, Pachecho, and Shor & McCarty (Centers for Medicare and Medicaid Services, 2014; Klarner, 2015; National Association of State Budget Officers, 2011; Office of The Assistant Secretary for Planning and Evaluation, 2015; Pacheco, 2011; Shor & McCarty, 2015; The National Bureau of Economic Research, 2015; U.S. Department of the Treasury, 2015). Additional details regarding this dataset are available upon request.

The CPS is sponsored by the Census Bureau and the Bureau of Labor Statistics and collects data annually on a range of social and economic topics including family characteristics, household composition, marital status, educational attainment, health insurance coverage, poverty, and income (U.S. Census Bureau, 2006). Because the survey

asks respondents questions about the prior year, CPS data for years 1998-2011 are used to create measures for years 1997-2010. I collapsed household responses to the CPS survey to state-level means using survey weight adjustments, resulting in state-level measures for each year of study.

These state-level sociodemographic data are merged with data measuring state fiscal capacity from the U.S. Department of Treasury, the FMAP from ASPE, Medicaid expenditures from NASBO, and the Medicare wage index from CMS. Finally, political measures are merged from the replication files of a series of academic papers: party control of state government from Klarner, state resident ideology from Pacheco, and measures of state legislator ideology from Shor & McCarty (Centers for Medicare and Medicaid Services, 2014; Klarner, 2015; National Association of State Budget Officers, 2011; Office of The Assistant Secretary for Planning and Evaluation, 2015; Pacheco, 2011; Shor & McCarty, 2011; U.S. Department of the Treasury, 2015).

Measures

Ideology & Medicaid Policy

Medicaid eligibility levels are measured for four age groups: the three traditional eligibility categories for children in Medicaid and CHIP (infants, children ages 1-5, and children ages 6-17) and for an age-weighted-average of all children 0-17 (Grogan & Rigby, 2009; Ullman & Hill, 2001). All measures are reported as the maximum family income at which a child is eligible for either Medicaid or CHIP and I run separate regressions for each classification. Income eligibility levels are reported as a percentage of the federal poverty level.

State resident ideology is operationalized using Pacheco's measure of state resident liberalism. Prior studies have used this measure to assess stability on issue-specific public opinion over time and to demonstrate the effect of public opinion on judicial decision making in the context of gay rights cases (Lewis, Wood, & Jacobsmeier, 2014; Pacheco, 2014). To construct this measure, Pacheco used a multilevel regression, imputation, and post-stratification method with a three year moving average on data from CBS/NYT surveys. Answers to the survey question *"How would you describe your views on most political matters? Generally, do you think of yourself as liberal, moderate, or conservative?"* were recoded as a dummy variable with positive responses indicating liberal political views and all other (conservative and moderate) responses equaling zero (Pacheco, 2011). The resulting measure is a state-year percentage of state residents who identify their political views as liberal out of all state residents who identify a political ideology (liberal, moderate, or conservative).

Sensitivity analyses were conducted substituting Pacheco's measure of partisanship for ideology (Appendix A). This measure was constructed using the same methods as for ideology, but with responses to the survey question *"Generally speaking, do you consider yourself a Republican, a Democrat, an Independent, or what?"* resulting in a measure of the percentage of state residents who identify as Democrats out of all state residents who identify a political party affiliation (Democrat, Republican, or Independent) (Pacheco, 2011). This analysis focuses on the results of state resident ideology rather than partisanship because partisanship is not a consistent measure across states (Key, 1942; Shor, Berry, & McCarty, 2010). Ideology, however, has not been shown to differ in

measurement across states to the same extent and is therefore a more representative measure of the tastes and preferences of voters at the state level.

Control of State Government

Control of state government is measured using five variables: party control of government, ideology of Senate Democrats, ideology of Senate Republicans, ideology of House Democrats, and ideology of House Republicans. Legislator ideology measures are included in the model in addition to party because the ideology of political parties varies greatly across states (Key, 1942; Shor & McCarty, 2011). Party is retained in addition to ideology due to the power of parties to set agendas, assign committee leadership positions, and influence legislator votes (Arnold, 1992; Cox & McCubbins, 2005).

Party control of state government is defined by Klarner as the party truly in control of state government, taking into account veto-proof majorities and super-majority requirements for budget passage and tax increases. If a party holds a veto proof majority in the legislature, then the party of the governor is ignored. If a party does not hold a veto proof majority, then the majority party in the legislature must also control the governorship in order to be coded as in control of state government. The majority party must also have enough members in both chambers to pass a budget and to pass a tax increase (Klarner, 2015). Party control is coded as a categorical variable: Democratic Party control and divided party control are included in the model and Republican Party control serves as the reference group.

State government ideology is operationalized using four state government ideology measures constructed by Schor & McCarty. This measure is constructed using Bayesian item-response theory models, state legislator roll call vote data, and legislator answers to

bridge questions from the Project Vote Smart National Political Awareness Test, resulting in statistical identification of legislator ideal points in a common ideology space (Shor & McCarty, 2011). The four measures included in this analysis capture the median ideology of each party (Democratic and Republican) in each body of the state legislature (Senate and House). Ideologies are recoded from the original dataset to range from 1 (most liberal) to -1 (most conservative).

State Sociodemographic Characteristics

Eleven of the twelve measures of state sociodemographic characteristics are created from CPS data aggregated to the state level (The National Bureau of Economic Research, 2015). Race is measured as the percent of state residents who are white and ethnicity is measured as the percentage of state residents who are Hispanic. Sex is measured as the percentage of state residents who are female; metropolitan status is measured as the percentage of state residents living in a metropolitan area; and education is measured as the percentage of adults in a state with a high school degree or more. Age is measured as the percentage of state residents 18 or younger. Marital status is measured as the percentage of state residents who live in families with a female single head of household. Uninsurance is measured as the percentage of state residents under the age of 18 who do not have any type of health insurance and is lagged one year. Unemployment is measured as the percentage of state residents in the work force who are not working. Poverty is measured as the percentage of state residents with family incomes below 100% FPL. Finally, state population is measured in 1000s of state residents and is calculated using the weighted frequency of CPS observations in each state.

The twelfth sociodemographic variable, the Medicare wage index, reflects differences in the cost of providing health care by region. It is a measure established by the Secretary of Health and Human Services reflecting the relative hospital wage level in the geographic area of a given hospital compared to the national average hospital wage level (Centers for Medicare and Medicaid Services, 2014). The Medicare wage index is an average for each state calculated using a formula based on the Medicare rural wage index, the Medicare wage index for the largest metropolitan statistical area in a state, and the urban-rural distribution of state population. The wage index is centered on the national average, 1, with lower cost states reporting wage indices less than 1 and higher cost states reporting wage indices greater than 1.

Fiscal Capacity & Medicaid Financing

State fiscal capacity is measured as total taxable resources, an annual measure calculated by the U.S. Department of Treasury as an estimate of the relative fiscal capacity of states. It is the unduplicated sum of the income flows produced within a state (gross state product) and the income flows received by its residents (state personal income) which a state can potentially tax (Office of Economic Policy, 2002). Total taxable resources are reported in thousands of dollars per capita.

Medicaid financing is measured two ways: the Federal Medical Assistance Percentage (FMAP), and a lagged measure of state Medicaid expenditures. The FMAP is measured as the percentage of each state's Medicaid expenses funded by the federal government. The FMAP determines the rate at which program spending is matched by the federal government. A state with a larger FMAP pays a lower marginal price for its

Medicaid program than a state with a smaller FMAP because a higher percentage of program expenditures are paid by the federal government.

Lagged Medicaid expenditures capture the current cost of a state's Medicaid program. Prior studies have found that states often make tradeoffs between the intensiveness of Medicaid programs, measured as generous benefits, and extensiveness of the program, measured as expanded eligibility (Howard, 2010). Lagged Medicaid expenditures are measured as the prior year's total Medicaid expenditures reported as a percentage of total state expenditures (National Association of State Budget Officers, 2011). By reporting Medicaid expenditures as a percentage of total, the cost of the Medicaid program is put in the context of a state's overall budget.

Yardstick Competition

Yardstick competition is operationalized using a measure of neighboring states' Medicaid eligibility levels for children. This measure is created using the described state policy dataset to average the % FPL eligibility level of all contiguous states excluding the state of interest in a given year.

Analytic Strategy

This analysis estimates the effects of public opinion on: 1) average eligibility levels for all children; 2) eligibility levels for infants; 3) eligibility levels for children ages 1-5; and 4) eligibility levels for children ages 6-17. The unit of analysis is the state and the analytic sample consists 633 state-year observations. State-years are excluded if variables are missing in the dataset and Nebraska and the District of Columbia are excluded for all years because they do not have traditional state governments. For states that operate both

a Medicaid expansion and a stand-alone CHIP program, the highest income eligibility level for either program in each state-age-year is used.

Hypotheses are tested using OLS regression models including two-way fixed effects (state and year) to account for time-invariant unobserved characteristics of states and secular trends that may be correlated with income eligibility levels for children in Medicaid and CHIP. Standard errors are clustered at the state level to adjust for potential serial correlation due to repeated observations over time (Bertrand, Duflo, & Mullainathan, 2002). I estimate for each state *s*, year *t*, age-category *a* the base equation:

$$Y_{s,t,a} = \beta_1 + \beta_2 \text{ State Resident Ideology}_{s,t} + \beta_3 \text{ State Government}_{s,t} + \beta_4 X_{s,t} + S + T + \epsilon$$

Where the dependent variable Y is the Medicaid eligibility level for a given state-year-age category; state resident ideology is the percentage of state residents who identify as liberal; state government is the set of measures of control of state government; X is a vector of control variables including state sociodemographic characteristics, fiscal capacity, Medicaid financing, and yardstick competition; S and T are state and year fixed effects; and ϵ is the error term. The resulting β_2 coefficient measures the effect of a one percentage point change in liberal state resident ideology in a state on that state's Medicaid eligibility levels, controlling for measures of state government and the remaining covariates. All models are tested for multicollinearity and all analyses were conducted using *STATA 14* statistical software (StataCorp, 2013).

In addition to these base equations, models with state resident ideology – fiscal capacity interaction terms and models without state resident ideology – Medicaid financing interaction terms are used to test the moderating effect of fiscal capacity and Medicaid financing on the relationship between state government and Medicaid eligibility levels.

Finally, models with one-year led dependent variables and models with one-year lagged independent are tested to account for potential delay in policy response. Models with a led dependent variable estimate the effect independent variables in year *t* on eligibility levels in year *t+1* (e.g. the effects of state resident ideology and other factors in 2005 on eligibility levels in 2006). Models with a lagged independent variable estimate the effect of state resident ideology in year *t-1* on eligibility levels in year *t*, controlling for covariates also in year *t* (e.g. the effects of state resident ideology in 2004 on eligibility levels in 2005, controlling for other variables in year 2005).

Results

Descriptive Statistics

During the study period 1997-2010, the average income eligibility level for children in Medicaid and CHIP ranged from 111% FPL to 400% FPL with a mean of 213% FPL (Table 1). Means are similar across age categories, with the highest eligibility levels for infants (217% FPL), followed by young children ages 1-5 (214.5% FPL), and lowest for older children ages 6-17 (212% FPL). The mean standard deviation in average eligibility levels for the sample is 57 percentage points. By state, standard deviations range from 0 in Arkansas, Oklahoma, and Rhode Island where eligibility levels were constant at 200%, 185%, and 250% FPL for the entire study period to 81.5 and 115.5 in New York and Tennessee where average eligibility levels ranged from 114% to 400% FPL from 1997-2010.

State resident ideology ranges from about 10% of residents identifying as liberal to almost 38% of residents identifying as liberal with a mean of 20.7%. By state, Mississippi has the least liberal resident ideology with a mean of 15% while Vermont, New York, and

Massachusetts all have a mean of 28% of residents identifying as liberal. The overall standard deviation for resident ideology is 4 percentage points; Ohio was the most consistent in ideology, with a standard deviation of 0.53 while Vermont saw the most change with a standard deviation of 4.16. Descriptive statistics for all covariates are included in Table 1.

The unadjusted relationship between state resident ideology and children's eligibility levels in Medicaid and CHIP from 1997-2010 is presented in Figure 2. The graph includes three lines fitted to 633 state-year observations, stratified by party control of government. There is a positive relationship between liberal state resident ideology and high income eligibility levels for all three stratified political groups. On average, states with divided government have the highest eligibility levels, while Republican controlled states have the lowest eligibility levels. Data points are plotted for three example states: Kansas (Republican control), Wisconsin (divided control), and Massachusetts (Democratic control). All three states experienced an increase in both liberal ideology and eligibility levels between 1997 and 2010.

Analysis Results

The results of the effect of liberal state resident ideology on children's Medicaid and CHIP eligibility levels are reported in Table 2. After controlling for state sociodemographic characteristics, control of state government, fiscal capacity, Medicaid financing, and yardstick competition, liberal ideology has a significant effect on eligibility levels in all four models, with a 1 percentage point increase in the percentage of state residents who identify as liberal leading to a 2.05 percentage point increase in average, age-weighted % FPL eligibility level ($p < 0.05$). This finding supports my first hypothesis

that there is a positive effect of liberal state resident ideology on state eligibility expansions of Medicaid and CHIP for children after controlling for confounding state characteristics and control of state government.

Among measures of control of state government, Democratic Party control and ideology of Senate Democrats and Senate Republicans have significant effects on eligibility levels. A change from non-Democratic Party control to Democratic Party control leads to a 16.43 percentage point increase in income average eligibility level ($p < 0.05$). A one percentage point increase in liberal ideology among Senate Democrats leads to a 0.46 percentage point increase in eligibility levels and a one percentage point increase in liberal ideology among Senate Republicans leads to a 0.49 percentage point increase in eligibility levels ($p < 0.05$). House ideology was not significant for either party.

Among the remaining covariates, the FMAP, lagged Medicaid expenditures, and neighboring states' policies all had significant effects on eligibility levels. A one percentage point increase in a state's FMAP is associated with a 2.21 percentage point increase in income eligibility levels ($p < 0.01$). A one percentage point increase in the percent of a state's total expenditures spent on Medicaid during the prior year leads to a 1.85 percentage point decrease in income eligibility levels ($p < 0.05$). Finally, a one percentage point increase the average eligibility levels of neighboring states leads to a 0.44 percentage point decrease in eligibility levels ($p < 0.01$).

The magnitude of effects of all significant determinants of average eligibility levels for children in Medicaid and CHIP are plotted in Figure 3. Effects are measured for a one percentage point increase for all determinants except for Democratic Party control of state government, which represents a switch from non-Democratic Party to Democratic Party

control. The largest effect is that of changing party control of state government, which is a change in category compared to changes of one percentage point for continuous variables.

In order to better compare effects across measures, Table 3 reports the effect of a one standard deviation increase in key determinants on average eligibility levels for children in Medicaid and CHIP. Taking into account the effect of these determinants relative to their variation in the sample, the effect of a change in state resident ideology is slightly larger in magnitude (1.06 percentage points) than the effect of Democratic Party control of state government. Both of these effects are smaller than the effects of the covariates, with a one percentage point increase in the FMAP resulting in the largest effect of 19.14 percentage points.

Results by Age Category

Table 2 also presents the model results of the effect of liberal state resident ideology eligibility levels for children in Medicaid and CHIP for each age category. Results are generally consistent across the four age categories: weighted average eligibility across ages, eligibility for infants, eligibility for children ages 1-5, and eligibility for children ages 6-17. State resident ideology does not significantly affect eligibility levels for children ages 1-5, for whom only Medicaid expenditures and neighboring states' policies are significant. Fiscal capacity is only a significant determinant of eligibility for infants, with a $1000 increase in total taxable resources per capita leading to a 1.44 percentage point increase in eligibility ($p < 0.05$).

Moderating Effects of Fiscal Capacity & Medicaid Financing

In order to test my second hypothesis, that fiscal capacity and Medicaid financing moderate the relationship state resident ideology and Medicaid eligibility levels by

constraining states' abilities to afford expanding program eligibility, additional models were analyzed including interaction terms between state resident ideology and fiscal capacity and between state resident ideology and Medicaid financing. Each model included the full model of average eligibility levels presented in Table 2 with one interaction term added. No interaction terms had significant effects, and the addition of interaction terms did not change the established effect of state resident ideology on eligibility levels (Appendix A). The lack of effect of any interaction terms does not support my hypothesis that fiscal capacity and Medicaid financing moderate the relationship between state resident ideology and eligibility levels. These constructs affect Medicaid and CHIP eligibility levels directly, but not by constraining the effect of control of state government on the policy output.

Sensitivity Analysis

In order to allow time for policy to respond to changes in state resident ideology and covariates, alternative models were run with led and lagged variables. These models include a basic led dependent variable model, which used the independent variables in year *t* to estimate the effects of eligibility levels in year *t+1* and a separate model that led both eligibility levels and party control are led by one year to control for the party in control during the year eligibility policy is set. An alternative model lagged state resident ideology by one year, using state resident ideology in year *t-1* to estimate the effects of eligibility levels in year *t* while controlling for covariates in year *t*. A final model lagged state resident ideology by one year and led eligibility level, using state resident ideology in year *t-1* to estimate the effects of eligibility levels in year *t+1* while controlling for covariates in year

t. All models identified a significant effect of state resident ideology on eligibility levels, with magnitudes ranging from 2.10 pp to 2.45 percentage points ($p < 0.05$, Appendix A).

Tests of multicollinearity are also presented in Appendix A. No variables have variance inflation factors greater than 10, however both House Democrat ideology and education are approaching that level. Alternative models were analyzed excluding these two variables and excluding uninsurance due to potential collinearity with fiscal capacity (Appendix A). The significant relationship between liberal state resident ideology and eligibility levels remained in both alternative specifications.

In order to assess the stability of the finding that liberal state resident ideology is a significant determinant of Medicaid eligibility policy, the effects of ideology from the full weighted average model and from nine alternative model specifications are plotted in Figure 4. All models use the same analytic strategy including OLS regressions with state and year fixed effects and standard errors clustered at the state level. In a bivariate model measuring the effect of liberal ideology on Medicaid eligibility levels and in a second model adding the five measures of state government to the bivariate model, no statistically significant effect of liberal ideology is found. In the remaining eight models, all including the ten measures of state sociodemographic characteristics, liberal ideology is significant, with a magnitude ranging from 1.79-2.45 pp. The largest magnitude effects are observed in model 10, where the dependent variable is led by one year to allow time for changes in ideology to be translated into policy, and in model 5, where the effects of ideology on policy are measured without controlling for characteristics of state government. Finally, the decrease in magnitude of the effect of liberal ideology from 2.44 to 2.05 (16%) when measures of state government are added to the model (Model 5 to Model 6) indicates that

the secondary pathway, through state government, does mediate the relationship between state resident ideology and Medicaid policy.

Discussion

State resident ideology is an important determinant of increased eligibility levels for children in Medicaid and CHIP, even after controlling for measures of party control and ideology of state legislators, fiscal capacity, Medicaid financing, sociodemographic characteristics, and the eligibility policies of neighboring states. The effect of ideology on eligibility levels is also found to be partially translated through elements of state government, including party control and the mean ideology of Senate Democrats and Senate Republicans. The positive effect of liberal state resident ideology confirms that the relationship between public opinion and state policy outcomes identified by Erikson, Wright, and McIver is also true for state Medicaid policy, as it pertains to children (Erikson et al., 1993). The magnitude of the effect of ideology on eligibility levels, however, is modest: in order to increase eligibility levels 25 percentage points, rates of liberal ideology would have to increase by three standard deviations. If, however, both the direct and indirect (through state government) effects of ideology are accounted for, the magnitude of the effect of ideology is much larger.

The effect of yardstick competition is the opposite of my expectation: increases in neighboring states' eligibility levels are negatively associated with state eligibility expansions. States are not motivated to expand eligibility after learning from the expansions of their neighbors, nor do they "race to the bottom" by lowering their eligibility levels in response to neighbors lowering their eligibility levels. One possible explanation is that states judged the expansions of their neighbors and concluded that they were not

good policy decisions. An alternative explanation is that states do not compare themselves to their contiguous neighbors, but rather to similar states nationwide, and that the measure is faulty in its construction. Further analysis is needed to better understand the effect of yardstick competition on Medicaid eligibility policy.

Strengths and Limitations

This study is primarily limited by the inability to directly measure state residents' policy preferences for Medicaid and CHIP income eligibility levels. Using liberalism as the measure of public opinion is imperfect and direct responses to survey questions regarding Medicaid and CHIP eligibility expansions for children would be stronger measures. Although the literature has consistently identified a relationship between liberal ideology and support for expanded social welfare programs, individuals may have different policy preferences for different programs. Additionally, this model assumes that as state resident liberalism increases, support for higher Medicaid eligibility levels continues to increase. It is possible, however, that once eligibility levels reach a certain level, even the most liberal voters would no longer support eligibility expansion. Finally, eligibility levels are only one measure of state Medicaid policy. This analysis cannot account for the role of public opinion on other Medicaid policies impacting access to health care once insured, quality of the care received, or the cost of the program to beneficiaries or taxpayers.

In spite of these limitations, this study contributes a number of additions to the current literature. It develops and tests a comprehensive conceptual framework modeling the effect of public opinion, measured as ideology, on Medicaid eligibility expansions for children. It also uses the most comprehensive dataset of state income eligibility policies for children in Medicaid and CHIP to date. Finally, this study adds to our understanding of

what motivates state eligibility policies for Medicaid and CHIP, which is critical to designing future policies to reduce rates of uninsurance among children and increase equity in the program.

Implications for Policy

One of the philosophical rationales for giving states responsibility for health policymaking is that the government closest to the people is best suited to govern due to its ability to respond to the tastes and preferences of its residents (Holahan, Weil, & Wiener, 2003). This study's finding, that the variation in state eligibility levels for children in Medicaid and CHIP is at least partially due to differences in ideology between states, supports this philosophical rationale. It is also consistent with Oates' assessment that allocation of resources to the public sector is best determined at the state level and with Erikson, Wright, & McIver's findings that public opinion drives state policy (Erikson et al., 1993; Oates, 1999). As a test of federalism, this result demonstrates the responsiveness of states to the tastes and preferences, as reflected by ideology, of their residents. For Medicaid policymaking, this result demonstrates that allowing states flexibility in program design has allowed for the translation of the tastes and preferences of state residents into Medicaid policy.

The distinct effect of ideology separate from party control of state government shows that variation in eligibility levels for children in Medicaid is not due simply to partisan battles along lines drawn by the national party leadership. While policymakers may not be able to control the public opinion of state populations, opportunities exist to reframe Medicaid and CHIP policy to better match the tastes and preferences of state residents. For example, to gain support from more conservative voters, policymakers can

reframe the issue of expanding Medicaid from one of welfare to one of market inefficiency and discuss the policy changes as a way to promote market-oriented solutions. Arkansas, one of few conservative states to expand Medicaid under the Affordable Care Act (ACA) has already taken this approach, purchasing qualified health plan coverage for their newly Medicaid eligible adults through the state health insurance marketplace. Future research should measure public opinion specific to the Medicaid program and evaluate the success of policy solutions in matching or changing public opinion.

While public opinion is a driver of eligibility levels for children, financial factors also contribute to changes in these policies. The current FMAP formula is designed to provide additional federal assistance to states with relatively lower fiscal capacity, thereby reducing differences between states in their ability to afford the Medicaid program. This analysis finds that a state's FMAP has a significant effect on eligibility expansions, with higher federal matching rates leading to higher eligibility levels. The magnitude of this effect, when measured in terms of standard deviations, is more than double that of state resident ideology. The federal government has used this policy lever throughout the history of the Medicaid program to increase federal funding and thereby motivate state spending on the program. The results of this analysis highlight the effect of this policy lever specifically on child eligibility levels. The currently enhanced CHIP matching rates established by the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) may serve as a further test of this lever, with the caveat that this enhancement of 23 percentage points is consistent across states. In order to truly motivate states to expand eligibility, the FMAP would need to be adjusted to increase the federal support specifically to states with lower eligibility levels.

While these findings support allowing states flexibility in Medicaid program design, this flexibility is not without its own challenges. State variation in eligibility levels across states leads to inequity for low income children and for tax payers. Low income children's eligibility for public health insurance is dependent upon the state they live in, while tax payers from states without generous eligibility policies subsidize the expanded programs of other states through the redistribution of federal tax dollars across states. One policy to increase equity is for federal officials to increase mandatory minimum eligibility levels for children in the program, similar to the OBRA Medicaid reforms of the 1990s, or to cap eligibility expansions at a lower level. The ACA did increase the eligibility floor to 138% FPL for all children, however this is lower than the existing eligibility policy of all states. Future policies could raise the minimum above existing levels, as OBRA did in the 1990s. These policies designed to increase equity come at the cost of state flexibility and efficiency in the allocation of resources to public spending.

As ACA implementation continues and the states adapt to a changing health care system, both state and federal policymakers will need to assess the role of CHIP moving forward. Once the primary option for states to provide health insurance for children in families too wealthy to qualify for Medicaid but unable to afford the purchase of private coverage, CHIP has been demonstrated to increase insurance coverage, improve access to care, and ultimately impact health outcomes for low-income children. Following ACA expansion, however, these children may reside in families eligible for federal subsidies to purchase private health insurance through the Marketplace and parents will face different decisions regarding the costs of insuring their children. Maintenance of effort requirements have prevented states from cutting eligibility levels for CHIP and shifting children to the

Marketplace thus far, but the requirements are scheduled to end as CHIP reauthorization is debated in 2019. The results of this paper suggest that once state flexibility regarding CHIP is reinstated, states may change eligibility levels to better match the tastes and preferences of their residents, potentially shifting children from CHIP to Marketplace coverage. Federal policymakers will need to weigh the benefits of allowing states to set policies to match the tastes and preferences of residents with the challenges of inequity when considering changes to the program during reauthorization.

Figure 1. Conceptual Framework of the Relationship between State Resident Ideology and State Medicaid Policy

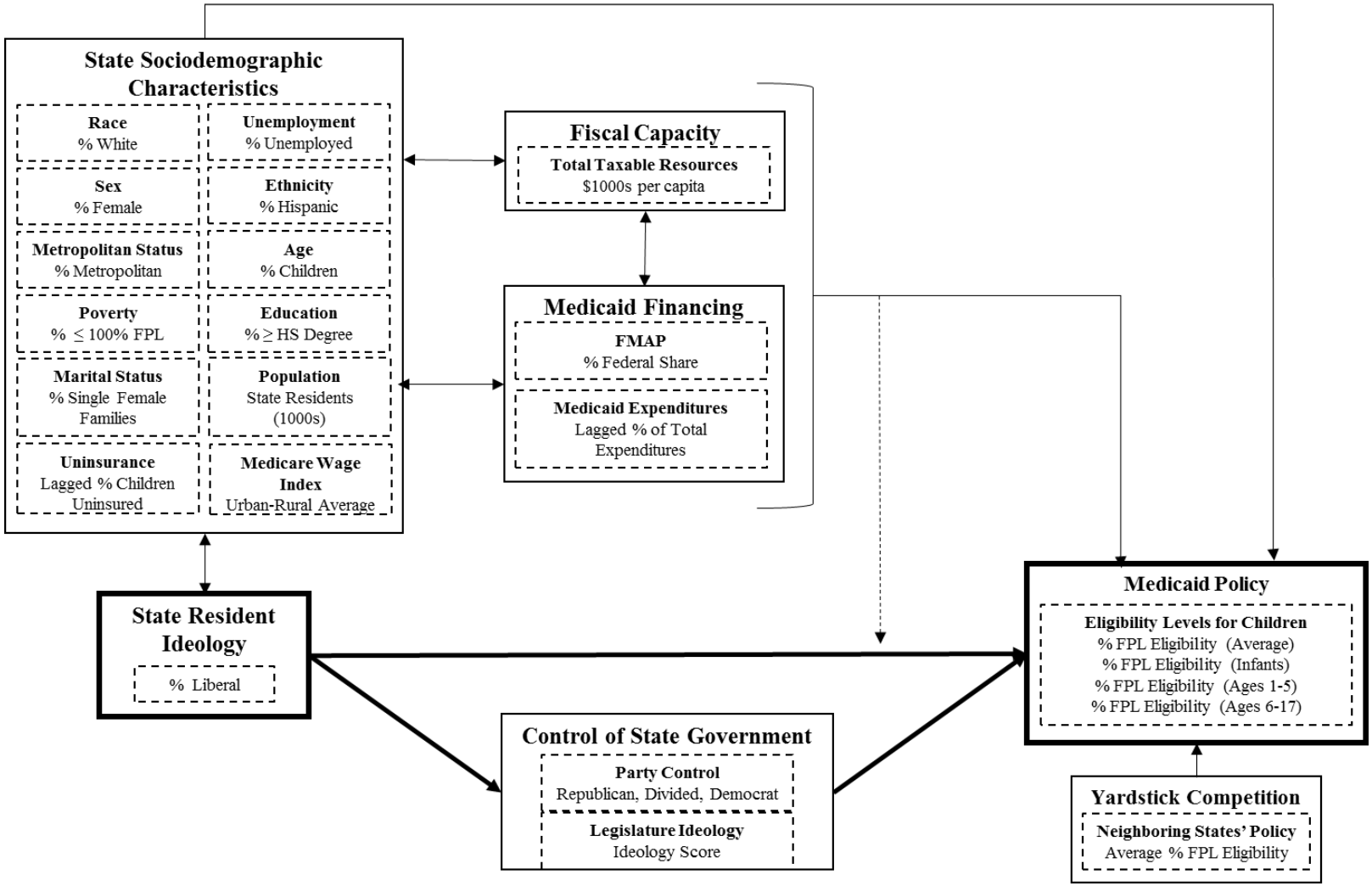
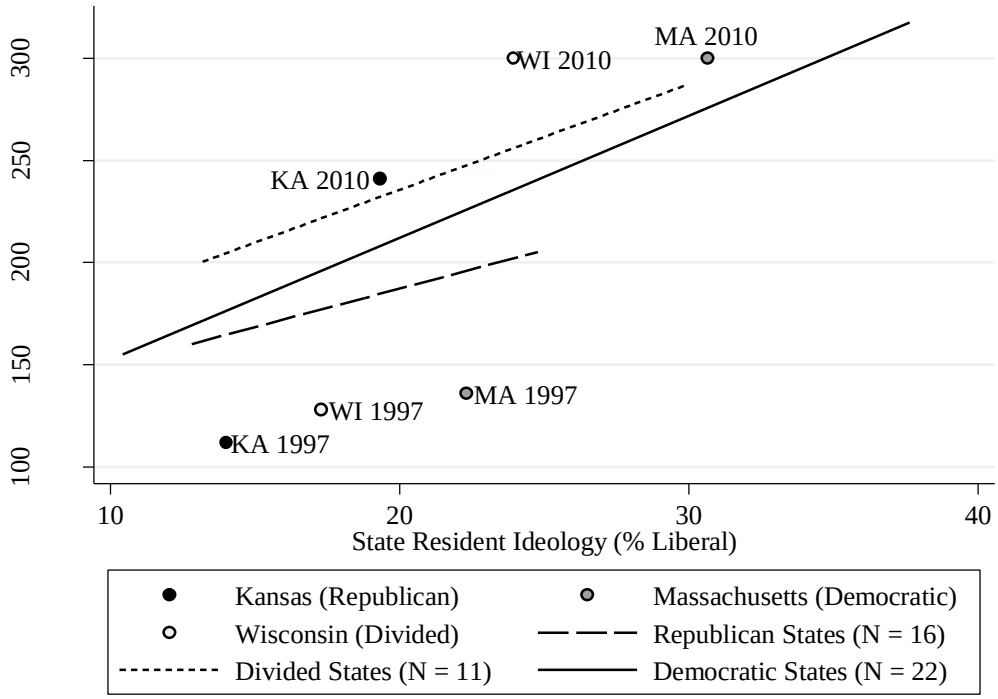


Table 1. Descriptive Statistics 1997-2010

Variable	Mean	Std. Dev.	Min	Max
Eligibility Level (%FPL, Average)	212.62	57.15	111.00	400.00
Eligibility Level (%FPL, Infants)	217.07	52.10	133.00	400.00
Eligibility Level (%FPL, Ages 1-5)	214.12	54.84	133.00	400.00
Eligibility Level (%FPL, Ages 6-17)	211.62	58.87	100.00	400.00
State Resident Ideology (% Liberal)	20.69	3.96	10.42	37.64
Democratic Party Control of State Government	0.25	0.43	0.00	1.00
Divided Control of State Government	0.53	0.50	0.00	1.00
Ideology, Senate Democrats	72.85	39.00	-15.90	168.10
Ideology, Senate Republicans	-66.12	34.09	-147.90	45.20
Ideology, House Democrats	72.65	38.75	-23.20	179.90
Ideology, House Republicans	-65.47	34.58	-136.80	18.20
Race (% White)	82.60	12.58	17.77	99.62
Ethnicity (% Hispanic)	8.70	9.78	0.19	45.25
Sex (% Female)	50.94	0.89	47.91	53.65
Age (% Children)	26.72	2.26	20.28	35.17
Education (% HS or More)	63.85	3.67	53.65	73.48
Marital Status (% Single Female Families)	22.88	3.00	13.30	33.42
Metropolitan Status (% Metropolitan)	71.24	19.81	22.33	100.00
Uninsurance (Lagged % Children Uninsured)	11.31	4.62	2.95	28.01
Unemployment (% Unemployed)	5.35	2.09	1.40	14.90
Poverty (% Below 100% FPL)	12.17	3.21	4.69	23.21
Total Taxable Resources (per capita, $1000s)	54.07	10.55	34.98	96.81
FMAP	61.57	8.66	50.00	84.86
Population (1000s)	5967.01	6547.87	482.99	37223.39
Medicare Wage Index	0.98	0.14	0.76	1.47
Medicaid Expenditures (Lagged % of Total Expenditures)	19.51	5.70	4.60	35.90
Neighboring States' Mean Eligibility (%FPL, Average)	212.98	37.98	111.00	333.33
Neighboring States' Mean Eligibility (%FPL, Infants)	217.14	33.02	133.00	333.33
Neighboring States' Mean Eligibility (%FPL, Ages 1-5)	214.49	35.49	133.00	333.33
Neighboring States' Mean Eligibility (%FPL, Ages 6-17)	212.01	39.68	100.00	333.33
N=633				

Figure 2. State Resident Ideology and Children's Medicaid/CHIP Eligibility by Party Control of State Government 1997-2010



Notes:
Lines fitted to 633 state-year observations of state resident ideology and children's eligibility level from 1997-2010
Republican states are those with either Republican or divided control of the state legislature for all years: AK, AZ, FL, ID, IN, KA, MT, ND, OH, PA, SC, SD, TX, UT, VA, and WY.
Divided states are those with divided control for all years or both Republican and Democratic control at some point during the sample: CO, GA, IA, MI, MO, NH, NJ, OK, OR, TN, and WI.
Democratic states are those with either Democratic or divided control of the state legislature for all years: AL, AR, CA, CT, DE, HI, IL, KY, LA, ME, MD, MA, MN, MS, NV, NM, NY, NC, RI, VT, WA, and WV.

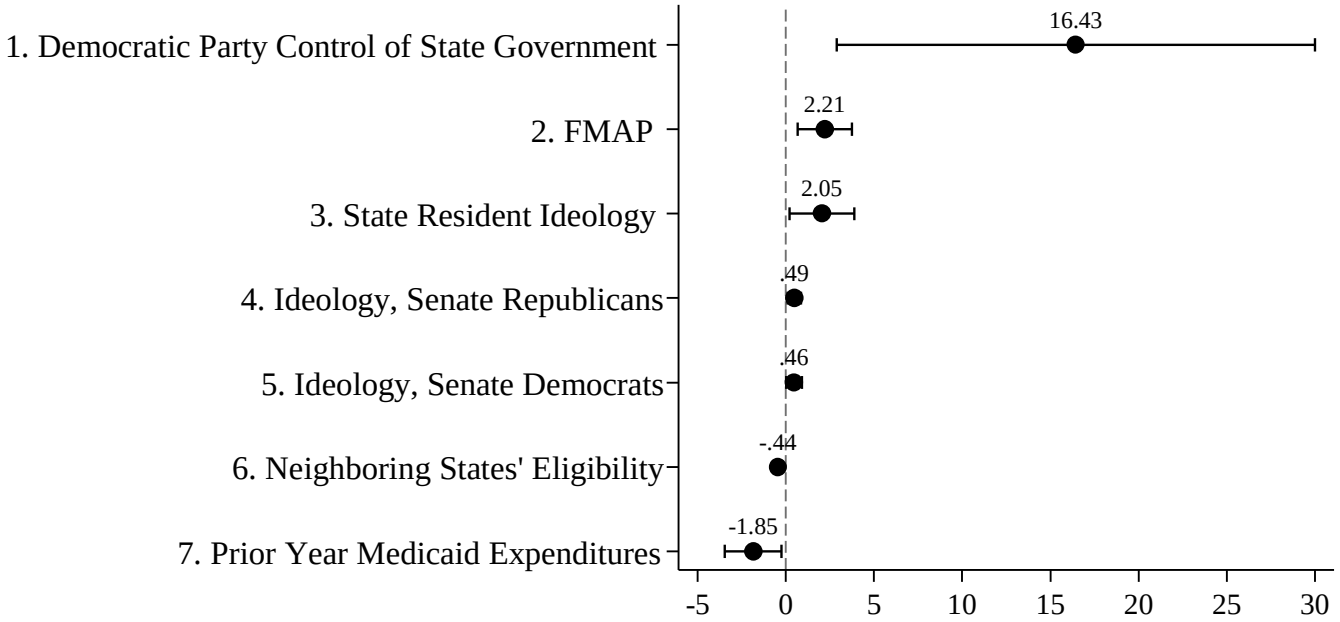
Table 2. Effect of State Resident Ideology on Children's Medicaid/CHIP Eligibility Levels

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Ideology (% Liberal)	2.05*	1.85*	2.09	2.05*
Democratic Party Control of State Government	16.43*	13.25*	15.28	17.10*
Divided Control of State Government	2.26	0.89	2.00	2.43
Ideology, Senate Democrats	0.46*	0.39	0.44	0.48*
Ideology, Senate Republicans	0.49*	0.41	0.44	0.51*
Ideology, House Democrats	-0.38	-0.42	-0.40	-0.36
Ideology, House Republicans	1.30	0.83	1.24	1.36
Race (% White)	0.23	-0.75	-0.05	0.43
Ethnicity (% Hispanic)	-3.20	-2.62	-3.01	-3.34
Sex (% Female)	2.92	2.06	3.02	2.94
Age (% Children)	2.43	2.13	2.65	2.35
Education (% HS or More)	-1.47	-0.26	-1.00	-1.77
Marital Status (% Single Female Families)	-1.85	-0.71	-1.96	-1.89
Metropolitan Status (% Metropolitan)	-0.54	-0.50	-0.57	-0.53
Uninsurance (Lagged % Children Uninsured)	-1.00	-0.91	-1.10	-0.96
Unemployment (% Unemployed)	-2.28	-1.51	-1.99	-2.48
Poverty (% Below 100% FPL)	0.23	-0.29	0.28	0.27
Total Taxable Resources (per capita, $1000s)	1.04	1.44*	1.08	0.99
FMAP	2.21**	2.21**	2.09	2.26**
Population (1000s)	0.00	0.00	0.00	0.01
Medicare Wage Index	-76.37	-52.77	-73.77	-79.57
Medicaid Expenditures (Lagged % of Total)	-1.85*	-1.49*	-1.70*	-1.93*
Neighboring States' Mean Eligibility (%FPL)	-0.44**	-0.34***	-0.41**	-0.45**
Notes: N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001; OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table 3. Effect of a One Standard Deviation Increase in Key Determinants on Average Children's Eligibility Level

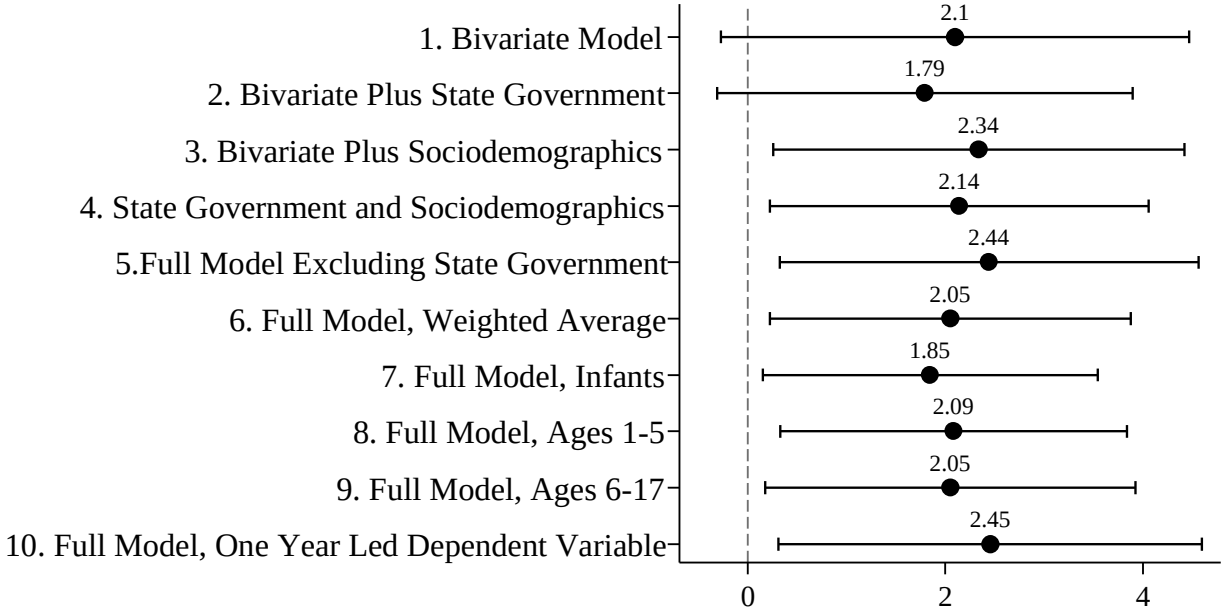
Change in Key Determinant	**Effect on Average Eligibility Level**
State Resident Ideology (% Liberal)	8.12 percentage point increase
Democratic Party Control of State Government	7.06 percentage point increase
Senate Democrat Ideology (Liberal)	17.94 percentage point increase
Senate Republican Ideology (Liberal)	16.70 percentage point increase
FMAP	19.14 percentage point increase
Medicaid Expenditures (% of Total)	10.55 percentage point decrease
Neighboring States' Mean Eligibility (% FPL)	16.71 percentage point decrease
Notes: Table includes all significant covariates from the average eligibility level OLS regression results in Table 2.	

Figure 3. Key Determinants of Average Children's Eligibility Levels in Medicaid and CHIP



Notes:
All effects are measured as the effect of a one percentage point increase in the independent variable on age-averaged children's eligibility levels in Medicaid and CHIP as % FPL except for party control of state government and fiscal capacity. Party control of government is measured as the effect of a change from Republican Party control to divided control or from divided control to Democratic Party control. Fiscal capacity is measured as the effect of a $1,000 per capita increase in total taxable resources.
Error bars represent 95% confidence intervals.

Figure 4. Estimates of the Effect of Liberal State Resident Ideology from Alternative Model Specifications



Notes: Error bars represent 95% confidence intervals.

Chapter 2

Deserving or Deviant?

The Role of Public Opinion in Public Health Insurance Eligibility and Program Design for Parents

Background

This chapter expands upon Chapter 1's finding that increases in liberal state resident ideology lead to increased eligibility levels for children in the Medicaid and CHIP programs by extending this analysis to parents. Flexibility in Medicaid program design allows states to make different Medicaid policy decisions for children and for parents and there are a number of reasons to expect that the effect of state resident ideology on Medicaid policy may be different for a program covering parents than for a children's program. These differences include: unique social constructs for low-income children and low-income parents; greater variation in eligibility thresholds across states for parents than for children; and greater state flexibility in program design for parental coverage than for child coverage. Differences in the Medicaid eligibility policies, the policy outcome studied in this analysis, for children and those for parents suggests that the relationship between state resident ideology and Medicaid eligibility may differ for the two populations. Differences in how society views children and parents as deserving for welfare benefits and the greater flexibility of program design allowed to states for parental programs than for state programs are potential drivers of a different effect for parents than for children.

Liberal and conservative views on the role of government in providing health care for the poor vary both broadly and across specific target populations (Weissert & Weissert, 2008). Throughout the history of American social policy, children have been classified as

dependents (Ingram & Schneider, 1993; A. Schneider & Ingram, 1993; A. L. Schneider & Ingram, 2005). This classification indicates that although children are not a politically powerful group, society broadly accepts allocating benefits to children for largely moral and value-driven reasons. Able-bodied adults, however, are more likely to be classified as deviants, a group without political power and not considered deserving of assistance (Ingram & Schneider, 1993; A. Schneider & Ingram, 1993; A. L. Schneider & Ingram, 2005). In the rhetoric used to discuss these distinct groups, children may be described as innocent or helpless while able-bodied adults are more likely to be expected to provide for themselves. Among adults, parents are more likely to be classified as deserving than childless adults because providing parents with assistance can have a positive effect on both parents and their children. The classification of the target population matters, as dependent groups are likely to receive government benefits than deviants (Ingram & Schneider, 1993; A. Schneider & Ingram, 1993; A. L. Schneider & Ingram, 2005).

In practice, society's classifications of various target populations as deserving or non-deserving is based on the values, morals, and preferences of individuals. Thus, it is quite probable that residents of one state may consider parents to be deserving of government assistance while residents of another state may not. Similarly, residents of a single state may consider children to be a deserving population, but not their parents. Historical trends in the increased coverage of children through public health insurance may have established a baseline level of support for such program across ideological and party lines (Gilmer, 2005; Howell & Kenney, 2012a; Paradise, Julia, 2014). The lack of a similar trend in public health insurance coverage for low income adults and the lack of consistent

framing of low-income adults as a deserving population suggest that Medicaid policy decisions for parents may be more ideological and partisan than for children.

Whereas all states cover children in Medicaid and CHIP above federal minimums, many states have not voluntarily expanded Medicaid eligibility for parents, and even fewer states have expanded eligibility to childless adults (Dubay & Kenney, 2004). In states without expansions, parents are eligible only up to the federally mandated minimum level, which is a state's 1996 eligibility level for financial and medical assistance (Centers for Medicare and Medicaid Services, 2016a). As these levels have not been updated in a decade, the eligible parental population is limited to only very low income parents: on average, parents up to 41% of the federal poverty level (FPL) (Centers for Medicare and Medicaid Services, 2016a). For the study period 1997-2010, 18 states had not expanded parental Medicaid eligibility above this level (Table 1). Among states with eligibility expansions for parents, flexibility is provided through section 1115 waivers and Health Insurance Flexibility and Accountability Waivers (HIFA), which both allow states to expand eligibility to non-covered populations (Coughlin & Zuckerman, 2008; Guy Jr., 2010). Thus, for parents, the question is not only how does state resident ideology affect income eligibility levels as a percentage of the federal poverty level, but also how does state resident ideology affect whether or not a state will expand eligibility for parents at all.

Finally, states demonstrate greater variation in program design choices for parents than for children, due in part to greater federal restrictions on charging premiums or limiting benefits for children than for parents (Centers for Medicare and Medicaid Services, 2016b; Kenney, Hadley, & Blavin, 2006). States have utilized the flexibility provided by HIFA and 1115 waivers and the provisions of the Deficit Reduction Act of 2005 to develop

programs for parents with fewer benefits and greater cost sharing than traditional Medicaid (Coughlin & Zuckerman, 2008; Guy Jr., 2010). Understanding the determinants of these program design choices is important, because they impact access to care for beneficiaries.

Prior literature has established that Medicaid programs with premiums or limited benefits are less successful than traditional programs at reducing uninsurance, increasing use of preventive services, and increasing continuity of coverage (Dague, 2014; Guy Jr., 2010; Ku & Coughlin, 1999; Sommers, Tomasi, Swartz, & Epstein, 2012; Wright et al., 2005). Cuts to benefits in Missouri's Medicaid program led to program dissatisfaction and increased burdens of uncompensated care for hospitals and clinics without achieving savings to the program (Zuckerman, Miller, & Pape, 2009). The use of premiums or restricted benefits in program design may reflect a belief that parents are deserving of more limited assistance than other groups, or they may reflect trade-offs made between breadth and depth of Medicaid program design. Therefore, this analysis will investigate the role of state resident ideology on the type of public health insurance program through which coverage for parents is expanded.

This study builds off of the analysis in Chapter 1 to assess the role of state resident ideology on eligibility levels for parents in state Medicaid programs from 1997-2010. It also introduces and analyzes two new research questions specific to the parental population: what is the effect of state resident ideology on the likelihood of an eligibility expansion, and what is the effect of state resident ideology on the type of public health insurance program offered to parents.

Conceptual Framework

This analysis uses the conceptual framework described in Chapter 1 with adaptations to account for differences between the child and parent Medicaid policies. Eligibility levels remain as a measure of Medicaid policy and two outcomes are added: the presence of an eligibility expansion for parents and the expansion program type. All three outcomes can be interpreted as measures of Medicaid program generosity. The presence of any eligibility expansion, higher income eligibility levels, and programs without premiums and with full benefits are all indicators of a more generous Medicaid program than their alternatives. Both the presence of any eligibility expansion and higher eligibility levels increase the generosity of a Medicaid program by increasing the number of parents who are eligible for the program. Programs without premiums and with full benefits are more generous than Medicaid programs with premiums and limited benefits because they provide an insurance product that is lower-cost to the beneficiary and covers more services. Programs without premiums and with full benefits have been shown to improve access to care more than programs with premiums or limited benefits, thereby making them more generous programs (Dague, 2014; Guy Jr., 2010; Ku & Coughlin, 1999; Sommers et al., 2012; Wright et al., 2005).

As in the prior chapter, this model illustrates the direct relationship between state resident ideology and these three Medicaid policy outcomes (Figure 1). It also includes the secondary pathway of state resident ideology on Medicaid policy through control of state government and controls for covariates including state sociodemographic characteristics, fiscal capacity, Medicaid financing, and neighboring states' policies. Because fiscal capacity and Medicaid financing were not found to have a moderating effect on the

relationship between state resident ideology and Medicaid in the children's model, these constructs are included in this framework as covariates but not as moderating factors.

From this framework, I draw the following four hypotheses. First, I expect that increases in liberal state resident ideology will increase the likelihood that a state expands eligibility for parents in the Medicaid program. Second, I hypothesize that increases in liberal state resident ideology will increase eligibility levels for parents in the Medicaid program when measured as a percentage of the federal poverty level. Third, I expect that increases in liberal state resident ideology will lead to expansions without premium requirements. Finally, I expect that increases in liberal state resident ideology will lead to expansions with full coverage of benefits.

Study Design

Data

This analysis uses a dataset of state Medicaid eligibility and program design policies for parents from 1997-2010. All policies are measured for employed parents by state-year. The dataset includes measures of eligibility expansion, eligibility level, and program type, all described in greater detail below. The dataset was assembled in conjunction with the creation of the children's state policy dataset described in Chapter 1 using reports from the Kaiser Family Foundation (KFF) and the National Governor's Association (NGA), as well as review of state waivers, state reports, state plan amendments, materials from local advocacy organizations, and news reports.

As in Chapter 1, these data are supplemented by merging on additional annual state-level aggregate measures from eight sources: the Current Population Survey (CPS) Annual Social and Economic Supplement; the U.S. Department of Treasury; the Office of the

Assistant Secretary for Planning and Evaluation (ASPE), Department of Health and Human Services; the Centers for Medicare and Medicaid Services (CMS); the National Association of State Budget Officers (NASBO); and the research of Klarner, Pachecho, and Shor & McCarty (Centers for Medicare and Medicaid Services, 2014; Klarner, 2015; National Association of State Budget Officers, 2011; Office of The Assistant Secretary for Planning and Evaluation, 2015; Pacheco, 2011; Shor & McCarty, 2015; The National Bureau of Economic Research, 2015; U.S. Department of the Treasury, 2015).

Measures

Ideology & Medicaid Policy

State resident ideology is again measured as a state-year percentage of state residents who identify their political views as liberal out of all state residents who identify a political ideology (liberal, moderate, or conservative), a measure created by Pacheco (Pacheco, 2011).

Eligibility levels for employed parents are measured as a percentage of the federal poverty level (FPL). The highest eligibility level for any public health insurance coverage program funded through Medicaid or CHIP is reported. This includes Medicaid eligibility as well as eligibility for subsidy-types programs such as premium assistance. The presence of an eligibility expansion for parents is measured as a dichotomous variable indicating whether or not a state increased its eligibility level by 25 percentage points or more. This indicator of an expansion remains for all years following the expansion unless the expansion was rolled back by a state. Because a number of states had expanded parental eligibility prior to the beginning of this analysis (1997), a second measure was created to

indicate the presence of an eligibility level greater than or equal to 100% FPL. The classification of states according to these two measures is presented in Table 1.

Finally, the design of a state's public health insurance program for parents is classified using three different categorical measures: program type, premium requirements, and benefit level. Program type has four categories: no expansion; Medicaid; premium assistance-like; and premium assistance. No expansion indicates that a state did not increase eligibility levels above the federally mandated minimum levels for parents. The remaining three categories indicate both that a state increased eligibility levels above federal minimums and the type of program for which eligibility was expanded. These categories include states that expanded prior to the study period as classified by their program type. Medicaid indicates that eligibility was expanded for a Medicaid program for parents. Premium assistance indicates that eligibility was expanded for a program that provided parents with subsidies to purchase private health insurance either offered to them through their employer or through the individual market. Premium assistance-like indicates that eligibility was expanded for a program that financed individuals' purchase of a limited set of private plans. States with such programs used public funding to pay the premiums for parents to enroll in a specific state-selected private health insurance plan or to select from a limited number of state-selected managed care plans.

The measure of premium requirements has five categories: no expansion; Medicaid with no premium; Medicaid with a premium; premium assistance-like; and premium assistance. These categories are the same as above, except that Medicaid has been separated into two distinct categories. Medicaid with no premium indicates that eligibility was expanded for a Medicaid program without the requirement that parents pay premiums or

enrollment fees for their coverage. Medicaid with a premium indicates that eligibility was expanded for a Medicaid program that requires either premiums or enrollment fees for coverage.

Benefit level has five categories: no expansion; Medicaid with full benefits; Medicaid with limited benefits; premium assistance-like; and premium assistance. These categories are again the same as above, except that Medicaid has been separated by benefit design. Medicaid with full benefits indicates that eligibility was expanded for a Medicaid program that covers the same benefits as those federally mandated for very low income parents. Medicaid with limited benefits indicates that eligibility was expanded for a Medicaid program that provides more limited benefits than those federally mandated for the parental group.

State Sociodemographic Characteristics

Measures of the state sociodemographic characteristics include race, sex, metropolitan status, poverty, marital status, unemployment, ethnicity, education and population, and Medicare wage index and are the same measures as those described in Chapter 1. Uninsurance has been changed to measure the percentage of state residents under 100% FPL who do not have any type of health insurance and is lagged one year. Age has been updated to measure the percentage of state residents who are adults (18 and over). Both measures are still aggregated to the state-level from household CPS data using the method described in Chapter 1.

Yardstick Competition

Yardstick competition is operationalized using a measure of neighboring states' parental public health insurance eligibility levels. This measure is created using the

described state policy dataset to average the % FPL eligibility level of all contiguous states excluding the state of interest in a given year.

Control of State Government, Fiscal Capacity & Medicaid Financing

Measures of control of state government, fiscal capacity, and Medicaid financing remain unchanged from Chapter 1. Control of state government is measured using five variables: party control of government, ideology of Senate Democrats, ideology of Senate Republicans, ideology of House Democrats, and ideology of House Republicans. State fiscal capacity is measured as total taxable resources and Medicaid financing is measured as the Federal Medical Assistance Percentage (FMAP) and a lagged measure of state Medicaid expenditures.

Analytic Strategy

Likelihood of Expansion

This analysis estimates the effect of state resident ideology on the likelihood that a state has an eligibility expansion of greater than 25 percentage points and on the likelihood that a state has an eligibility level at or above 100% FPL. The unit of analysis is the state, 47 of which are included in this analysis. Nebraska and the District of Columbia are excluded for all years because they do not have traditional state governments and Tennessee and Missouri are excluded for all years due to retroactively-applied judicial decisions regarding parental Medicaid eligibility. Analysis of the likelihood of an eligibility level at or above 100% FPL is conducted using a sample of 609 state years. Analysis of the likelihood of an eligibility expansion is conducted first using a sample of 565 state-years. The reduction in observations is due to the lack of any expansions in 1997. A secondary analysis of the likelihood of an eligibility expansion is conducted on a limited

sample of states that had not expanded over 100% FPL prior to the beginning of the study. This limited sample analysis is included because it is unlikely that a state which has already expanded eligibility for parents over 100% FPL will expand eligibility for parents again. This sample contains 469 state-years.

Hypotheses are tested using logistic regression models including year fixed effects to account for external factors that influence the likelihood of expansion in all states to the same degree. Standard errors are clustered at the state level to adjust for potential serial correlation due to repeated observations over time (Bertrand et al., 2002). I estimate for each state *s*, year *t*, the base equation:

$$P(Y)_{s,t} = \beta_1 + \beta_2 \text{ State Resident Ideology}_{s,t} + \beta_3 \text{ State Government}_{s,t} + \beta_4 X_{s,t} + T + \epsilon$$

Where the dependent variable P(Y) is the likelihood of either an eligibility expansion of greater than 25 percentage points or the likelihood of an eligibility level at or above 100% FPL. State resident ideology is the percentage of state residents who identify as liberal; state government is the set of measures of control of state government; X is a vector of control variables including state sociodemographic characteristics, fiscal capacity, Medicaid financing, and yardstick competition; T is a year fixed effect; and ϵ is the error term. The resulting marginal effect of the β_2 coefficient measures the effect of a one percentage point higher percentage of liberal state residents on the likelihood of each outcome, controlling for state government and the remaining covariates.

Eligibility Levels

The second analysis estimates the effect of within-state changes in state resident ideology on a state's eligibility level for parents in Medicaid. The unit of analysis is the state and the primary analytic sample includes the same 609 state year observations in the

first analytic sample described above. Analysis is conducted on a second analytic sample limited to states that had not previously expanded eligibility above 100% FPL. This sample contains 505 observations. I test my hypothesis using the same OLS regression models discussed in Chapter 1. These models use OLS regression models including two-way fixed effects (state and year) to account for unobserved factors that may be correlated with income eligibility levels for parents. Standard errors are clustered at the state level to adjust for potential serial correlation due to repeated observations over time (Bertrand et al., 2002). I estimate for each state *s*, year *t*, the base equation:

$$Y_{s,t} = \beta_1 + \beta_2 \text{ State Resident Ideology}_{s,t} + \beta_3 \text{ State Government}_{s,t} + \beta_4 X_{s,t} + S + T + \epsilon$$

Where the dependent variable Y is the Medicaid eligibility level for parents in a given state-year; state resident ideology is the percentage of state residents who identify as liberal; state government is the set of measures of control of state government; X is a vector of control variables including state sociodemographic characteristics, fiscal capacity, Medicaid financing, and yardstick competition; S and T are state and year fixed effects; and ϵ is the error term. The resulting β_2 coefficient measures the effect of a one percentage point increase in liberal state resident ideology in a state on that state's eligibility levels for parents, controlling for state government and the remaining covariates

Program Type

Finally, the third analysis estimates the effect of state resident ideology on the type of program expanded by a state. The unit of analysis is the state and the analytic sample consists of all 609 state-year observations described in the first analytic sample above. I test my hypothesis using multinomial logit regression models including year fixed effects to account for external factors that influence the likelihood of expansion in all states to the

same degree. Standard errors are clustered at the state level to adjust for potential serial correlation due to repeated observations over time (Bertrand et al., 2002). I estimate for each state *s*, year *t*, the base equation:

$$P(Y)_{s,t} = \beta_1 + \beta_2 \text{ State Resident Ideology}_{s,t} + \beta_3 \text{ State Government}_{s,t} + \beta_4 X_{s,t} + T + \epsilon$$

Where the dependent variable P(Y) is the likelihood of each mutually exclusive category of a given outcome measure (program type, premium requirements, or benefit level) occurring. State resident ideology is the percentage of state residents who identify as liberal; state government is the set of measures of control of state government; X is a vector of control variables including state sociodemographic characteristics, fiscal capacity, Medicaid financing, and yardstick competition; T is a year fixed effect; and ϵ is the error term. The resulting marginal effect of the β_2 coefficient measures the effect of a one percentage point higher liberal state resident ideology on the likelihood of each outcome, controlling for state government and the remaining covariates and constraining the likelihoods of all outcomes to sum to 1.

All models described above are tested for multicollinearity and all analyses were conducted using *STATA 14* statistical software (StataCorp, 2013).

Results

Descriptive Statistics

Among the full sample of 609 state-years 1997-2010, 25% had expansions of 25 percentage points or more and 44.5% had eligibility levels at 100% FPL or higher (Table 2). Nearly 56 percent of state-years are classified as having no expansion; among those with expansions, Medicaid accounts for 35.6% of programs, 3% of programs are classified as premium assistance-like, and 5.6% are premium assistance. Among Medicaid programs,

about half require premiums and about 31% limit the benefits covered. Full descriptive statistics specific to each analytic sample are presented in Table 3 and 4.

Likelihood of Expansion

When tested using the full sample of state-years, this analysis rejects my hypothesis that liberal state resident ideology increases the likelihood of eligibility expansions for parents, as there is no significant effect of state resident ideology (Table 5). When the sample is limited to exclude states that expanded prior to the study period, however, the results support my hypothesis. A one percentage point increase in liberal state resident ideology leads to a 3.15 percentage point increase in the likelihood of a state expanding Medicaid eligibility for parents if that state had not expanded eligibility prior to the study period ($p < 0.001$). Measured a third way using the full sample of state-years, a one percentage point increase in liberal state resident ideology leads to a 4.01 percentage point increase in the likelihood of a state having an eligibility level at or above 100% FPL ($p < 0.001$).

Eligibility Levels

Again, when tested using the full sample of state-years, this analysis rejects my hypothesis that liberal state resident ideology increases eligibility levels for parents in Medicaid, as there is no significant effect of state resident ideology (Table 6). When the sample is limited to exclude states that had expanded prior to the study period, however, a one percentage point increase in liberal state resident ideology leads to a 3.26 percentage point increase in parental eligibility levels ($p < 0.05$). The other significant determinants in this limited sample model are Democratic Party control of state government, education, and lagged uninsurance. A switch to Democratic Party control of state government leads

to a 41.63 percentage point increase in eligibility levels ($p < 0.05$); a one percentage point increase in the percentage of state residents with a high school degree or more education leads to a decrease in eligibility of 5.65 percentage points ($p < 0.05$); finally, a one percentage point increase in the lagged percentage of individuals in poverty who were uninsured leads to a 1.20 percentage point decrease in eligibility ($p < 0.01$).

Program Type

The analysis of the effect of state resident ideology on program type for parents supports my hypothesis that an increase in liberal state resident ideology leads to an increased likelihood of Medicaid programs without premiums and with full benefits compared to no expansion and to alternative program designs (Table 7). When measured as program type, a once percentage point increase in liberal state resident ideology leads to a 3.43 percentage point decrease in the likelihood of no expansion ($p < 0.01$), a 2.53 percentage point increase in the likelihood of having a Medicaid program ($p < 0.05$), and a 0.90 percentage point increase in the likelihood of having a premium assistance program ($p < 0.05$).

When Medicaid is classified by premium requirements, a one percentage point increase in liberal state resident ideology leads to a 3.36 percentage point decrease in the likelihood of no expansion ($p < 0.01$), a 2.28 percentage point increase in the likelihood of having a Medicaid program with no premium ($p < 0.05$), no effect on the likelihood of having a Medicaid program with a premium, and a 1.19 percentage point increase in the likelihood of having a premium assistance program ($p < 0.05$).

Finally, when Medicaid is classified by benefits covered, a one percentage point increase in liberal state resident ideology leads to a 3.47 percentage point decrease in the

likelihood of no expansion ($p < 0.01$), a 2.55 percentage point increase in the likelihood of having a Medicaid program with full benefits ($p < 0.05$), no effect on the likelihood of having a Medicaid program with limited benefits, and a 0.94 percentage point increase in the likelihood of having a premium assistance program ($p < 0.05$).

Additional sensitivity analysis results are included in Appendix B.

Discussion

State resident ideology is a significant determinant of the likelihood of state eligibility expansions for parents in Medicaid, parental income eligibility levels for the Medicaid program, and the type of public health insurance program for parents implementated by states. Whereas all states expanded eligibility for children above federally mandated levels, expansions for parents are less common. The increased likelihood of expansion attributable to ideology increases the likelihood that a state will expand Medicaid eligibility for parents from 32% to 35.15%. The increased likelihood of high eligibility levels attributable to ideology increases the likelihood that a state will have eligibility levels at or above 100% FPL for parents from 24.3% to 28.31%.

The effect of state resident ideology on eligibility levels is larger for parents than it is for children. When measured as a one standard deviation change, increased liberal state resident ideology leads to a 13.14 percentage point increase in parental eligibility levels compared to the 8.12 percentage point effect found for children's eligibility levels. Among covariates, a one standard deviation increase in the likelihood of Democratic Party conrol of state government leads to an 18.32 percentage point increase in parental eligibility levels, compared to the 7.06 percentage point increase for children's eligibility levels (Table 8). None of the remaining determinants of children's eligibility were significant in

the parent model. Overall, parental eligibility levels are determined primarily by state resident ideology and party control of state government, whereas children's eligibility levels are also affected by measures of Medicaid financing.

Not only do states increase eligibility for parents when liberal state resident ideology increases, they do so through the most generous program types. The largest magnitude increase in the likelihood of each program type is for Medicaid programs compared to premium assistance or premium assistance-like programs. Within Medicaid, states are more likely to expand Medicaid without premiums and with full benefits, while no effect is found for Medcaid programs with pregmiums or limited benefits.

Strengths and Limitations

As an extension of the analysis discussed in Chapter 1, this analysis shares similar strengths and limitations. By using state resident ideology as a proxy for state residents' preferences for parental medicaid programs, this analysis is unable to capture program-specific preferences. This is a particular limitation for the comparision of ideology's effect on child and parental policies, as the use of a single measure of preferences for both programs may mask differences in perferences regarding each group within the same state. As in Chapter 1, the model of ideology on eligibility levels assumes that as state resident liberalism increases, support for higher Medicaid eligibility levels continues to increase. This assumption is relaxed in the models with limited samples by excluding states that were unlikely to experience an additional expansion. The differences observed between full and limited sample models confirm that the effect of liberalism on eligibility policies is not, in fact, linear across all eligibility levels.

Despite these limitations, this study again contributes to the literature by adding to our understanding of what motivates state policies for parental Medicaid expansions, parental Medicaid eligibility levels, and parental Medicaid program design. It again uses the most comprehensive dataset of state income eligibility policies for parents in Medicaid and CHIP to date. This greater understanding of policy development is critical to designing future policies to provide access to health care to low-income parents.

Implications for Policy

As with the results of Chpater 1, the positive effect of state resident ideology on Medicaid eligibility policy for parents is consistent with Oates' view of fiscal federalism, which asserts that allocation of resources is best determined at the state level in order to match the tastes and preferences of state residents (Oates, 1999). It is also consistent with Erikson, Wright, & McIver's findings that public opinion drives state policy (Erikson et al., 1993). While this effect is significant as a determinant of both children's and parents' Medicaid eligibility policies, the magnitude of the effect is much larger for parents.

Differences in the magitude of the effect for parents and children may be due, in part, to the greater flexibility in program design allowed for parents. Since states are required to cover children up to, on average, 111% FPL, there is limited room for differentiation between states in eligibility levels. For parents, however, any coverage above 41% FPL, on average, is through an optional expansion, leaving more room for state variation. It is unlikely that this difference in federal minimums can explain the difference in effect for parents and children, however, as even children's eligibility levels range from 160-400% FPL.

Instead, I expect that the majority of the difference in magnitude of the effect of state resident ideology on Medicaid policy for parents and children can be explained by greater ideological differences regarding the provision of government assistance for health care for parents than for children. State residents, regardless of liberal or conservative ideology, may support eligibility expansions for children in Medicaid and CHIP because they consider children to be a deserving population (Ingram & Schneider, 1993; A. Schneider & Ingram, 1993; A. L. Schneider & Ingram, 2005). This hypothesized broad acceptance is consistent with historical trends regarding eligibility for children versus parents for public health insurance and other welfare type programs in the United States (Dubay & Kenney, 2004). The lack of historical coverage for parents combined with the observed large magnitude of the effect of liberal ideology on eligibility policy is consistent with the conceptualization of able-bodied adults as non-deserving of public assistance (Ingram & Schneider, 1993; A. Schneider & Ingram, 1993; A. L. Schneider & Ingram, 2005).

This difference in perceived deservingness, tied to resident ideology, may also account for the significance of the FMAP in the children's model, but not in the parental model. If state residents are generally supportive of expanding eligibility for children, an increase in federal funding for Medicaid and CHIP may be a sufficient motivator for a state to expand eligibility, even without changes in resident ideology or support for an expansion. In a state where residents are ideologically opposed to the idea of expanding eligibility for parents, however, no amount of increased federal funding would be expected to motivate eligibility expansion. The idea that no amount of additional federal funding could sway the policies of a state ideologically opposed to expanding Medicaid for parents

is best reflected by the choices of Republican Governors regarding Medicaid expansion through the Affordable Care Act. The willingness of 19 states to forgo a 100% FMAP for newly eligible enrollees (decreasing to 90% by 2020) confirms that finances alone did not drive Medicaid expansion decisions following the ACA (Cardwell, Anita & Sheedy, Kaitlin, 2016).

The recommendation for allowing states greater flexibility in program design to encourage eligibility expansion in non-liberal states is more important for parents than it was for children, as parental eligibility expansions have been shown to be more sensitive to ideological changes. While more liberal states choose to expand Medicaid programs with full benefits and no premiums, allowing flexibility in program design such as the waivers approved for Arkansas and Indiana to expand Medicaid under ACA make it possible for more states to expand eligibility for public health insurance for parents. Continued research and evaluation is necessary, however, to assess how this flexibility in design impacts enrollment, access to health care, and out of pocket costs for eligible parents.

Figure 1. Conceptual Framework of the Relationship between State Resident Ideology and State Medicaid Policy

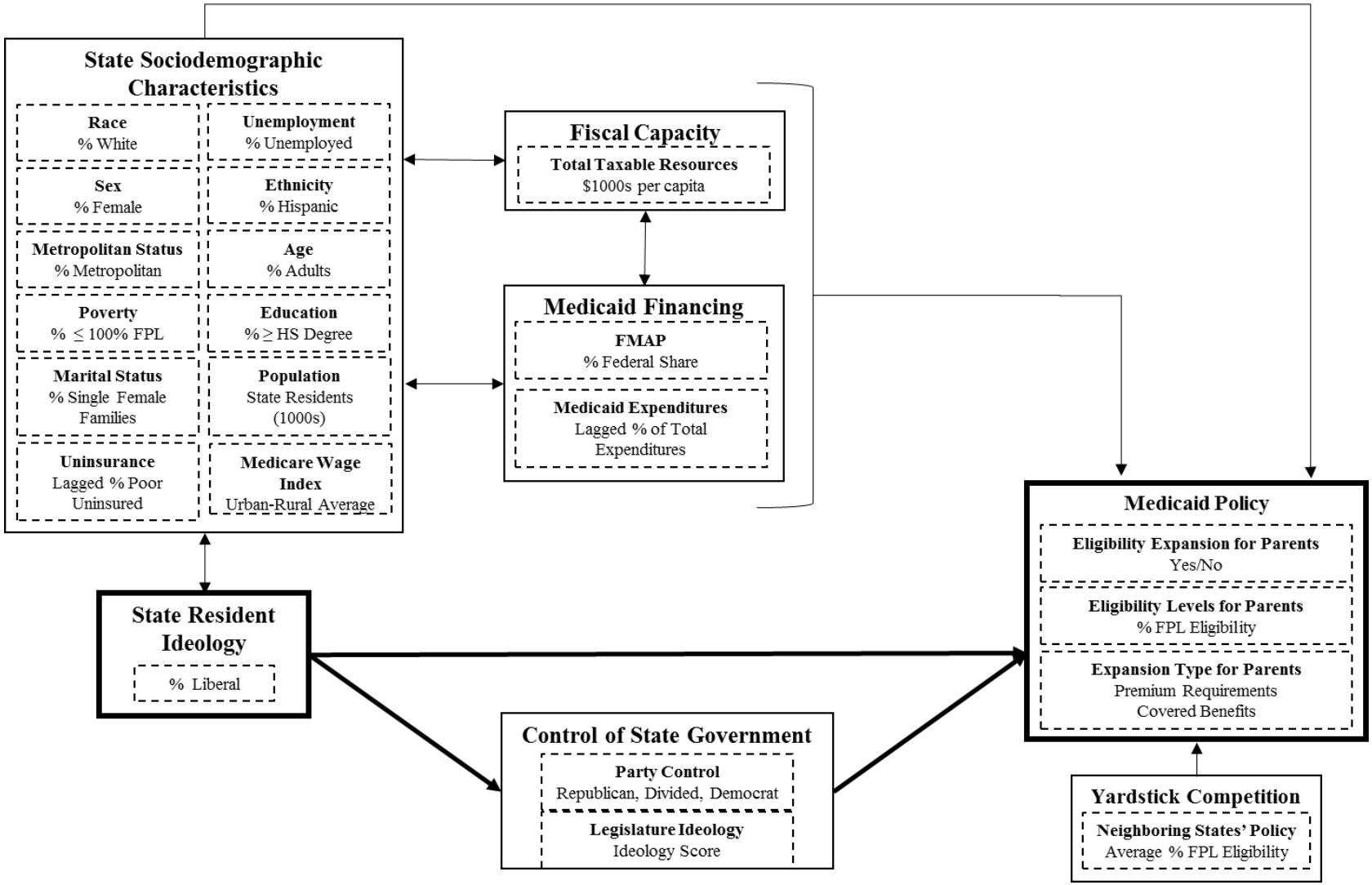


Table 1. Classification of States

State	Expansion > 25 pp	Eligibility ≥100% FPL	State	Expansion > 25 pp	Eligibility ≥100% FPL
Alabama			Montana		
Alaska			Nebraska	*	*
Arizona	2001-2010	2001-2010	Nevada	2006-2010	2006-2010
Arkansas	2006-2010	2006-2010	New Hampshire		
California	2000-2010	2000-2010	New Jersey	2001-2010	2001-2010
Colorado	2006-2010	2010	New Mexico	2005-2010	2005-2010
Connecticut	2001-2010	1997-2010	New York	2001-2010	2001-2010
Delaware		1997-2010	North Carolina		
District of Columbia	*	*	North Dakota		
Florida			Ohio		1997-2010
Georgia			Oklahoma	2005-2010	2005-2010
Hawaii		1997-2010	Oregon		1997-2010
Idaho	2005-2010	2005-2010	Pennsylvania	2002-2010	2002-2010
Illinois	2002-2010	2002-2010	Rhode Island	1998-2010	1997-2010
Indiana	2008-2010	2008-2010	South Carolina		1997-2010
Iowa	2005-2010	2005-2010	South Dakota		
Kansas			Tennessee	*	*
Kentucky			Texas		
Louisiana			Utah	2002-2010	2002-2010
Maine	2000-2010	1997-2010	Vermont	1999-2010	1997-2010
Maryland	2006-2010	2006-2010	Virginia		
Massachusetts	2006-2010	1997-2010	Washington		1997-2010
Michigan			West Virginia		
Minnesota		1997-2010	Wisconsin		1997-2010
Mississippi			Wyoming		
Missouri	*	*			

Notes: * States excluded from analysis

Table 2. Descriptive Statistics: Categorical Variables 1997-2010

Variable		Frequency	Percent	Mean Eligibility
Eligibility Expansion (≥25pp)		164	24.92	
Eligibility Level ≥ 100% FPL		293	44.53	
Program Type	No Expansion	340	55.83	57% FPL
	Medicaid	217	35.63	170% FPL
	PA-Like	18	2.96	258% FPL
	PA	34	5.58	188% FPL
Premium Requirements	No Expansion	340	55.83	57% FPL
	Medicaid No Premium	112	18.39	127% FPL
	Medicaid Premium	105	17.24	218% FPL
	PA-Like	18	2.96	258% FPL
	Premium Assistance	34	5.58	188% FPL
Benefits Covered	No Expansion	340	55.83	57% FPL
	Medicaid Full Benefits	149	24.47	153% FPL
	Medicaid Limited Benefits	68	11.17	205% FPL
	PA-Like	18	2.96	258% FPL
	Premium Assistance	34	5.58	188% FPL

Notes: N=609

Table 3. Descriptive Statistics: Expansion and 100% FPL Models 1997-2010

Variable	Expansion Full Sample		Expansion Limited Sample		100% FPL		Min	Max
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.		
Eligibility Expansion (≥25pp)	0.26	0.44	0.32	0.47	--	--	0.00	1.00
Eligibility >100% FPL	--	--	--	--	0.44	0.50	0.00	1.00
State Resident Ideology (% Liberal)	20.90	4.03	20.59	4.06	20.78	3.99	10.42	37.64
Democratic Party Control of State Government	0.25	0.43	0.27	0.44	0.25	0.43	0	1.00
Divided Control of State Government	0.52	0.50	0.49	0.50	0.52	0.50	0	1.00
Ideology, Senate Democrats	-74.28	38.82	-72.54	40.55	74.23	38.92	-168.10	15.90
Ideology, Senate Republicans	65.63	34.25	66.59	34.88	-65.29	34.43	-45.20	147.90
Ideology, House Democrats	-73.99	39.09	-71.38	40.75	73.64	39.07	-179.90	23.20
Ideology, House Republicans	64.55	34.53	65.16	34.09	-64.29	34.59	-18.20	136.80
Race (% White)	82.48	12.80	83.64	10.03	82.57	12.81	17.77	98.59
Ethnicity (% Hispanic)	9.10	9.92	9.91	10.64	8.95	9.89	0.19	45.25
Sex (% Female)	50.92	0.88	50.93	0.88	50.92	0.89	47.91	53.65
Age (% Adults)	73.36	2.22	73.25	2.35	73.26	2.30	64.95	79.72
Education (% HS or More)	64.11	3.64	63.76	3.70	63.90	3.70	54.28	73.48
Marital Status (% Single Female Families)	22.87	3.03	22.89	3.11	22.84	3.04	13.30	33.42
Metropolitan Status (% Metropolitan)	71.29	20.11	70.25	21.74	71.13	20.18	22.49	100.00
Uninsurance (Lagged % Uninsured of those in Poverty)	29.67	7.62	30.38	7.68	29.69	7.56	10.82	54.10
Unemployment (% Unemployed)	5.43	2.14	5.36	2.06	5.35	2.11	1.40	14.90
Poverty (% Below 100%FPL)	12.10	3.22	12.35	3.34	12.14	3.24	4.69	23.21
FMAP	61.64	8.82	62.27	8.93	61.52	8.81	50.00	84.86
Population (1000s)	6000	6712	6261	7220	5978	6676	483	37223
Medicare Wage Index	0.98	0.14	0.97	0.14	0.98	0.14	0.76	1.47
Medicaid Expenditures (Lagged % of Total Expenditures)	19.22	5.36	19.74	5.33	19.15	5.40	4.60	33.70
Total Taxable Resources (per capita, $1000s)	54.76	10.72	54.42	10.86	54.28	10.70	35.45	96.81
Neighboring States' Mean Eligibility (%FPL)	109.56	49.30	113.19	50.57	107.75	48.88	27.67	300.00

Note: Full Sample N=565; Limited Sample=469

Table 4. Descriptive Statistics: Continuous Eligibility Model 1997-2010

Variable	Full Sample		Limited Sample		Min	Max
	Mean	Std. Dev.	Mean	Std. Dev.		
Overall Eligibility Level %FPL, Employed)	105.06	75.52	93.94	73.31	19.00	400.00
State Resident Ideology (% Liberal)	20.78	3.99	20.48	4.03	10.42	37.64
Democratic Party Control of State Government	0.25	0.43	0.27	0.44	0.00	1.00
Divided Control of State Government	0.52	0.50	0.49	0.50	0.00	1.00
Ideology, Senate Democrats	74.23	38.92	72.46	40.66	-15.90	168.10
Ideology, Senate Republicans	-65.29	34.43	-66.39	34.83	-147.90	45.20
Ideology, House Democrats	73.64	39.07	71.05	40.72	-23.20	179.90
Ideology, House Republicans	-64.29	34.59	-64.99	34.16	-136.80	18.20
Race (% White)	82.57	12.81	83.72	10.05	17.77	99.62
Ethnicity (% Hispanic)	8.95	9.89	9.76	10.61	0.19	45.25
Sex (% Female)	50.92	0.89	50.94	0.90	47.91	53.65
Age (% Adults)	73.26	2.30	73.16	2.43	64.83	79.72
Education (% HS or More)	63.90	3.70	63.55	3.76	53.65	73.48
Marital Status (% Single Female Families)	22.84	3.04	22.86	3.12	13.30	33.42
Metropolitan Status (% Metropolitan)	71.13	20.18	70.07	21.82	22.33	100.00
Uninsurance (Lagged % Uninsured of those in Poverty)	29.69	7.56	30.37	7.62	10.82	54.10
Unemployment (% Unemployed)	5.35	2.11	5.30	2.03	1.40	14.90
Poverty (% Below 100%FPL)	12.14	3.24	12.41	3.36	4.69	23.21
FMAP	61.52	8.81	62.15	8.93	50.00	84.86
Population (1000s)	5977.55	6675.50	6238.22	7180.42	482.99	37223.39
Medicare Wage Index	0.98	0.14	0.97	0.14	0.76	1.47
Medicaid Expenditures (Lagged % of Total Expenditures)	19.15	5.40	19.67	5.38	4.60	35.90
Total Taxable Resources (per capita, $1000s)	54.28	10.70	53.94	10.84	34.98	96.81
Neighboring States' Mean Eligibility (%FPL)	107.75	48.88	111.38	50.14	27.67	300.00

Notes: Full Sample N=609; Limited Sample N=505

Table 5. Effect of Liberal State Resident Ideology on the Likelihood of Eligibility Expansion and Likelihood of Eligibility Levels At or Above 100% FPL for Parents in Medicaid 1997-2010

Variable	Marginal Effects		
	Eligibility Expansion		Eligibility ≥ 100% FPL
	Full Sample	Limited Sample	
State Resident Ideology (% Liberal)	0.0139	0.0315***	0.0401***
Democratic Party Control of State Government	0.1963*	0.1299	0.0265
Divided Party Control of State Government	0.1836**	0.1864***	0.1255
Ideology, Senate Democrats	-0.0006	-0.0032	-0.0014
Ideology, Senate Republicans	0.0002	0.0001	0.0036
Ideology, House Democrats	0.0004	0.0029	0.0028
Ideology, House Republicans	0.0027	0.0009	-0.0027
Race (% White)	0.0063	0.0034	-0.0009
Ethnicity (% Hispanic)	0.0089	0.0046	-0.0011
Sex (% Female)	0.0111	-0.0174	-0.0214
Age (% Adults)	-0.0351	-0.0328	-0.0011
Education (% HS or More)	-0.0019	0.0068	-0.0037
Marital Status (% Single Female Families)	-0.0011	-0.0048	0.0098
Metropolitan Status (% Metropolitan)	0.0019	0.0045	0.0058*
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.0037	-0.0058	-0.0148***
Unemployment (% Unemployed)	-0.0429*	-0.0449*	0.0034
Poverty (% Below 100%FPL)	-0.0258	-0.02	-0.0331
FMAP	0.0039	0.0041	0.0209**
Population (1000s)	0	0	0
Medicare Wage Index	0.3817	0.5817	0.6559
Medicaid Expenditures (Lagged % of Total Expenditures)	0.0123*	0.0122*	-0.0028
Total Taxable Resources (per capita, $1000s)	-0.0129**	-0.0169***	-0.0048
Neighboring States' Mean Eligibility (%FPL)	0.0013*	0.0019*	0

Notes: Full Sample N=565; Limited Sample N=469; Over 100% FPL Sample N=609 * p < 0.05 ** p < 0.01 *** p < 0.001

Logit models including year fixed effects; robust standard errors clustered at the state level

Table 6. Effect of State Resident Ideology on Parents' Medicaid Eligibility Levels

Variable	Eligibility Level % FPL	
	Full Sample	**Limited Sample**
State Resident Ideology (% Liberal)	1.57	3.26*
Party Control of State Government (Democratic)	46.10*	41.63*
Party Control of State Government (Divided)	17.28	13.40
Ideology, Senate Democrats	.035	.070
Ideology, Senate Republicans	0.47*	.09
Ideology, House Democrats	-0.08	-0.36
Ideology, House Republicans	-0.25	-0.65
Race (% White)	-0.49	-3.50
Ethnicity (% Hispanic)	-0.31	0.47
Sex (% Female)	-0.75	-3.12
Age (% Adults)	2.75	4.39
Education (% HS or More)	-4.11	-5.65*
Marital Status (% Single Female Families)	-1.14	-0.41
Metropolitan Status (% Metropolitan)	2.21*	1.91
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.85*	-1.20**
Unemployment (% Unemployed)	-2.05	-2.83
Poverty (% Below 100%FPL)	1.26	-0.15
FMAP	0.63	1.54
Population (1000s)	-0.02	-0.01
Medicare Wage Index	-55.98	-48.05
Medicaid Expenditures (Lagged % of Total Expenditures)	0.72	1.24
Total Taxable Resources (per capita, $1000s)	-1.18	-1.47
Neighboring States' Mean Eligibility (%FPL)	-0.14	-0.15

Notes: Full Sample N=609; Limited Sample N=505; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
OLS models including state and year fixed effects; robust standard errors clustered at the state level

Table 7. Effect of State Resident Ideology on Type of Public Health Insurance Expansion for Parents

Type Classification	Expansion Type	Marginal Effect
Program Type	No Expansion	-0.0343**
	Medicaid	0.0253*
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0090*
Premium Requirements	No Expansion	-0.0336**
	Medicaid with No Premium	0.0228*
	Medicaid with a Premium	-0.0011
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0119*
Benefit Level	No Expansion	-0.0347**
	Medicaid with Full Benefits	0.0255*
	Medicaid with Limited Benefits	-0.0002
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0094*
Notes: N=609; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ Multinomial logit models including year fixed effects; robust standard errors clustered at the state level		

Table 8. Effect of a One Standard Deviation Increase in Key Determinants on Parents' Medicaid Eligibility Levels, Limited Sample

Change in Key Determinant	Effect on Average Eligibility Level
State Resident Ideology (% Liberal)	13.14 percentage point increase
Democratic Party Control of State Government	18.32 percentage point increase
Education (HS or More)	21.24 percentage point decrease
Uninsurance (Lagged % of Those in Poverty)	9.14 percentage point decrease
Notes: Table includes all significant covariates from the limited sample OLS regression results in Table 6	

Chapter 3

State Prescription Contraception Insurance Mandates: Effects on Pregnancy Prevention Efforts, Problems Getting Birth Control, and Unintended Births

Introduction

The Affordable Care Act (ACA) of 2010 required health insurance plans to cover women's preventive health services without cost sharing, beginning August 2012 ("Coverage of Certain Preventive Services Under the Affordable Care Act," 2013). The specific services to be covered were not defined in the law, but were instead specified by the Health Resources and Services Administration (HRSA) ("Coverage of Certain Preventive Services Under the Affordable Care Act," 2013). The final health plan coverage guidelines supported by HRSA include contraceptive methods and counseling, defined as "all Food and Drug Administration (FDA) approved contraceptive methods, sterilization procedures, and patient education and counseling for all women with reproductive capacity, as prescribed by a health care provider" ("Coverage of Certain Preventive Services Under the Affordable Care Act," 2013; Health Resources and Services Administration, 2015). Excluding certain religious employers exempt from the requirement, all non-grandfathered group health plans must comply with the HRSA Guidelines by providing prescription contraceptive services without cost sharing ("Coverage of Certain Preventive Services Under the Affordable Care Act," 2013).

This ACA contraceptive coverage mandate is expected to increase women's access to contraceptives by eliminating financial barriers including the full price of contraceptive methods not previously covered by an insurance plan, and copayments associated with

previously covered methods. Early evidence of the effect of the ACA contraceptive coverage mandate indicates a notable reduction in out of pocket costs paid by privately insured women (Finer, Sonfield, & Jones, 2014; Sonfield, Tapales, Jones, & Finer, 2015). Within the first several months of implementation, the percentage of privately insured women paying zero dollars out of pocket for oral contraceptives increased from 15% to 40% (Finer et al., 2014). This percentage increased to 67% one year after implementation of the mandate (Sonfield et al., 2015). Similar increases in the percent of women with zero out of pocket costs were found after one year for injectable contraception, the vaginal ring, and the intrauterine device (IUD) (Sonfield et al., 2015).

Prescription contraceptives, while more effective at preventing pregnancy than non-prescription methods such as withdrawal, spermicides, condoms, diaphragms, and fertility awareness methods, vary in effectiveness (Centers for Disease Control and Prevention, 2016b; Trussell, 2011; WHO, 2011). IUDs and implants are the most effective prescription contraceptives, with failure rates during typical use ranging from 0.05-0.80% (Centers for Disease Control and Prevention, 2016b; Trussell, 2011). Less effective prescription contraceptive methods include pills, injections, the patch, and the vaginal ring, with failure rates during typical use ranging from 6-9% (Centers for Disease Control and Prevention, 2016b; Trussell, 2011). Non-prescription contraceptives have the highest failure rates during typical use, ranging from 12-28% (Centers for Disease Control and Prevention, 2016b; Trussell, 2011). Costs vary across contraceptive types, as well. When comparing across wholesale acquisition costs, the annual cost of a method varies from $35 for condoms, $240 for injections, $370 for the pill, $598-703 for an IUD, to $945-982 for the ring or the patch (Trussell, Hassan, Lowin, Law, & Filonenko, 2015). These costs do

not include additional resources, such as the costs associated with clinician visits. The costs faced by women may vary from these wholesale costs according to market, point of access, insurance coverage, and other factors and may represent a barrier to access to and use of effective prescription contraceptives. The ACA mandate eliminates at least some aspects of these cost barriers to accessing contraceptives.

Increased access to no-cost contraceptives, in turn, has the potential to increase women's contraceptive use and decrease rates of unintended pregnancy. The U.S. Department of Health and Human Services Healthy People 2020 objectives include 15 family planning goals (U.S. Department of Health and Human Services, 2016). Among these goals are: increasing contraceptive use among women at risk of unintended pregnancy (sexually active women able to conceive); reducing the proportion of women experiencing pregnancy despite contraceptive use; and increasing the proportion of pregnancies that are intended (U.S. Department of Health and Human Services, 2016). At baseline, 83.3% of women at risk of unintended pregnancy used contraception at most recent sexual intercourse, 12.4% of women experienced pregnancy despite use of a reversible contraceptive method, and just over half of all pregnancies (51%) were intended (U.S. Department of Health and Human Services, 2016). The 2020 targets for these measures are 91.6%, 9.9%, and 56%, respectively (U.S. Department of Health and Human Services, 2016).

The ACA contraceptive coverage mandate has the potential to contribute toward the achievement of these goals by eliminating financial barriers to contraceptives. Removing financial barriers alone, however, does not guarantee access to prescription contraceptives. Women may not be aware that they are now eligible for prescription

coverage without cost sharing, or what specific products are covered by their plan (Weisman & Chuang, 2014). They may face non-financial barriers to access including challenges obtaining an appointment or getting to a clinic, not having a regular doctor, or difficulty accessing a pharmacy (Grindlay & Grossman, 2015). They may seek care from primary care providers who are not trained in the full range of FDA approved contraceptives, and they may not easily be able to receive referrals to specialists for contraceptive counseling and prescription (Weisman & Chuang, 2014). Among women who do gain access to prescription contraceptives, inconsistent use due to method-related difficulties, side effects, infrequent sex, or pregnancy ambivalence may put them at continued risk for unintended pregnancies and, ultimately, unintended births (Frost, J.J., Singh, S, & Finer, B, 2007). Therefore, the anticipated effect of the ACA contraceptive coverage mandate on unintended pregnancy is uncertain.

Prior to the implementation of the ACA contraceptive coverage mandate, 28 states implemented their own contraception coverage mandates by requiring insurers that covered prescription drugs to also cover the full range of FDA-approved contraceptive drugs and devices (Guttmacher Institute, 2012). While less comprehensive than the ACA mandate, which both mandated coverage and eliminated cost sharing, these state mandates were designed to increase access to prescription contraceptives for privately insured women (Atkins & Bradford, 2014). Understanding the effects of these state mandates can inform expectations for the effect of the ACA contraceptive coverage mandate on the above outcomes. Previous studies have found that state mandates increased the coverage of prescription contraceptives for privately insurance women, increased women's use of prescription contraceptives, and decreased abortion rates (Atkins & Bradford, 2014; Dills

& others, 2014; Magnusson et al., 2012; Mulligan, 2015; Raissian & Lopoo, 2014; Sonfield, A, Gold, R, Frost, J, & Darroch, J, 2004). No studies, however, have analyzed the effect of state contraception coverage mandates on unintended pregnancy or unintended birth.

This study uses Pregnancy Risk Assessment Monitoring Survey (PRAMS) data (1996-2012) and variation in the year of implementation of state contraception coverage mandates (2000-2008) to test the effects of these mandates on pregnancy prevention efforts, problems getting birth control, and unintended birth in a sample of recent mothers. This analysis of the effects of prior state policies will inform expectations for the effect of the ACA contraception mandate moving forward.

Background

Unintended Birth

Intendedness of pregnancy is a construct based on pregnancy timing and wantedness, with unintended pregnancy defined as a conception that is mistimed or unwanted (Finer & Zolna, 2011; Santelli et al., 2003). Nearly half of all pregnancies in the United States are unintended (48% in 2001, 49% in 2006, 51% in 2008 and 45% in 2011) (Finer & Zolna, 2011, 2016). Measured from the women's perspective, 5% of women of reproductive age in the U.S. had an unintended pregnancy in 2006 (Finer & Zolna, 2011). The proportions of unintended pregnancies and unintended births in the US have remained largely consistent since the 1980s, as North America was the only region in the world in which unintended pregnancy rates did not decline in the period from 1995-2008 (Finer & Zolna, 2011; Mosher, W.D., Jones, J., & Abma, J.C., 2012; Singh, Sedgh, & Hussain, 2010).

Mistimed pregnancies, those whose mothers wanted to become pregnant *later*, are more common than unwanted pregnancies, those whose mothers did not want to become pregnant *at all*, representing 29% and 19% of pregnancies in 2006, respectively (Finer & Zolna, 2011). Unintended pregnancies may end in abortion, miscarriage, or an unintended birth (Finer & Zolna, 2011). An estimated 42% of unintended pregnancies (excluding miscarriages) ended in abortion in 2011 (Finer & Zolna, 2016). According to analysis of the National Survey of Family Growth (NSFG), 37% of all U.S. births 2006-2010 were unintended (Mosher, W.D. et al., 2012).

Unintended births are associated with risky maternal behavior, lack of first trimester prenatal care, pre-term birth, lack of breast feeding, risk factors for poor child health outcomes, and physical abuse and violence (Cheng, Schwarz, Douglas, & Horon, 2009; D'Angelo, Gilbert, Rochat, Santelli, & Herold, 2004; Dott, Rasmussen, Hogue, Reefhuis, & others, 2010; T. D. Dye, Wojtowycz, Aubry, Quade, & Kilburn, 1997; Gipson, Koenig, & Hindin, 2008; Hellerstedt et al., 1998; Kost & Lindberg, 2015; Mosher, W.D. et al., 2012; S. T. Orr, Miller, James, & Babones, 2000; Santelli et al., 2003). In addition to adverse health outcomes, unintended pregnancies are expensive. The direct medical costs of unintended pregnancy in the United States are estimated to be $5 billion annually, with an average cost of $6,312 per unintended birth (Chiou et al., 2003; Trussell, 2007). These costs do not include other financial costs related to missing work or personal and social costs of an unintended birth. Direct medical costs of unintended pregnancy are disproportionately likely to be borne by the public Medicaid program, as 65% of births of unintended pregnancies are paid for by Medicaid, compared to 35% of intended pregnancy births (Mosher, W.D. et al., 2012).

State Contraceptive Coverage Mandates

Contraceptive coverage mandates were debated at the national level in 1997, when a group of bipartisan legislators introduced the Equality in Prescription Insurance and Contraceptive Coverage Act (EPICC) in Congress (Dailard, C, 2004). EPICC would have required insurance plans to cover prescription contraceptives and contraceptive services at the same level as other prescription drugs and outpatient services. The bill, however, failed to pass (Dailard, C, 2004).

The debate over contraceptive coverage mandates then shifted to the state level, where it gained attention following the FDA's approval of Viagra and its subsequent coverage by many health insurance plans (Dailard, C, 2004). The reproductive health community gained support for contraceptive coverage mandates, as Viagra became a symbol of the disparities in health insurance coverage of men's and women's prescriptions. Maryland enacted the first state contraceptive coverage mandate in 1998, with 27 additional states implementing mandates in subsequent years (Dailard, C, 2004; Mulligan, 2015).

These state mandates require all fully insured (not self-funded) health plans that cover prescription drugs to also cover the full range of FDA-approved contraceptive methods (Guttmacher Institute, 2012). The Employee Retirement Income Security Act of 1974 (ERISA) allows self-insuring firms to be exempt from state insurance regulations including these mandates (Atkins & Bradford, 2014; Dailard, C, 2004; Jensen, 1992; Mulligan, 2015). The percentage of covered workers insured by these exempt self-funded plans increased from 44% to 60% from 1999-2011, with workers employed by large firms more likely to be covered by self-funded plans than those at small firms (Kaiser Family

Foundation, Health Research & Educational Trust, & NORC, 2014). This limits the population expected to benefit from state mandates to women receiving insurance through an employer who does not self-insure, estimated by Mulligan (2015) to include about 31% of the population (Mulligan, 2015). While self-funded plans are not required to comply with state mandates, prior studies have found that these plans often offer benefits equal to or greater than those mandated by the states in which they operate, which may mitigate this limitation (Acs, Long, Marquis, & Short, 1996; Jensen, Rost, Burton, & Bulycheva, 1998; Jensen, Roychoudhury, & Cherkin, 1998; Krohm & Grossman, 1990; Power & Ralston, 1989). Other limitations to the potential effectiveness of these mandates include firm exemptions for religious beliefs, pre-existing coverage of contraceptives by insurance plans, and high cost-sharing for newly covered contraceptives (Mulligan, 2015).

Despite these limitations to the scope of state contraceptive coverage mandates, prior studies have found them to significantly affect contraceptive use. Atkins and Bradford (2014) used Behavioral Risk Factor Surveillance System (BRFSS) Family Planning Module data to test the effect of state mandates in Delaware and Iowa in 2000 on the use of effective birth control methods (Atkins & Bradford, 2014). They found that privately insured women in states with mandates were 5% more likely than those in control states to report using any effective contraceptive method (Atkins & Bradford, 2014). Among those using an effective methods they were 5% more likely to be using any prescription method, driven by a 4% increase in pill use (Atkins & Bradford, 2014).

Mulligan (2015) also used BRFSS data and found that mandates increase the likelihood of contraception use among all women by 2.1 percentage points and the use of hormonal birth control by 1.8 percentage points.. She found that mandates decrease state

abortion rates by about 3% (Mulligan, 2015). Dills & Grecu (2014) found that contraceptive insurance mandates increase contraceptive use and sexual activity, have no effect on overall birth rates, and decrease teen birth rates, particular among Hispanics (Dills & others, 2014). Both of these studies included all women 18-44, regardless of insurance coverage. By including uninsured women and those with Medicaid who would not be subject to mandates, these results are likely underestimates of the effect of mandates on their target populations.

Among studies that limited their analytic sample to privately insured women, Magnusson et al. (2012) found that women living in states with a comprehensive mandate had 64% increased odds of consistent contraceptive use compared to those in non-mandate states (Magnusson et al., 2012). Raissian and Lopoo (2014) did not find a robust effect of state contraceptive mandates on contraception use using the NSFG, but did find an increase in use among women of low educational attainment (Raissian & Lopoo, 2014).

I build on this literature by extending my analysis of the effects of state contraceptive coverage mandates beyond contraceptive use to measure their effects on unintended births. Prior studies have investigated birth and abortion rates, but have not measured intendedness (Dills & others, 2014; Mulligan, 2015). Atkins and Bradford used their estimated effect of mandates on contraceptive use in Delaware and Iowa combined with rates of typical contraceptive failure to estimate that about 4,000 unintended pregnancies were avoided per 100,000 sexually active women (Atkins & Bradford, 2014). This study improves upon such ‘back-of-the-envelope’ calculations by directly measuring the effect of mandates on the likelihood and number of unintended births using PRAMS annual survey data. In addition to measuring this important health outcome and component

of the Healthy People 2020 objectives, I measure mandates' effects on pregnancy prevention efforts and difficulty accessing birth control to inform the pathway through which mandates may affect unintended births (U.S. Department of Health and Human Services, 2016).

Conceptual Framework

Consistent with prior research on state contraception mandates, I use the Andersen & Aday behavioral model on access to health care to conceptualize the pathway through which state contraceptive coverage mandates may affect intendedness of birth (R. Andersen & Aday, 1978; R. M. Andersen, 1995; Magnusson et al., 2012). From this conceptual framework, I hypothesize that women affected by state contraceptive coverage mandates will be: 1. more likely to practice pregnancy prevention; 2. less likely to report problems getting birth control and; 3. less likely to experience an unintended birth than women not affected by mandates. This study focuses on unintended births because the survey sample is limited to recent mothers. Thus, any unintended pregnancies that did not result in births due to miscarriage or abortion are excluded from this analysis.

Illustrated in Figure 1, a state contraceptive coverage mandate changes the health care environment. This change in the regulation of private health insurance plans is expected to lead to an increase in coverage of prescription contraceptives by health plans. Prior studies have confirmed that state contraceptive mandates accounted for 30% of the increase in health insurance coverage of oral contraceptives and 40% of the increase in coverage of injectable contraceptives between 1993 and 2002 (Sonfield, A et al., 2004).

Next, I expect that as private health insurance plans increase coverage of prescription contraceptives, women will face lower out of pocket costs, as demonstrated

by early analysis of the ACA contraceptive mandate (Finer et al., 2014; Sonfield et al., 2015). Despite reductions in financial barriers, non-financial barriers may remain, including: fear of side effects, health-related effects, a dislike of birth control, difficulty with method use, difficulty maintaining enrollment in insurance plans, finding and scheduling appointments with providers, determining what contraceptives were covered, and navigating the prescription system may remain (Dennis et al., 2012; Foster et al., 2004). Due to these potential remaining barriers, I expect that state contraception mandates will reduce, but not eliminate, the likelihood that women report problems getting birth control.

Third, I expect that improved individual access to contraceptives will lead to increases in pregnancy prevention efforts and prescription contraceptive use. Numerous studies have found that health insurance is positively associated with contraceptive use, because insurance reduces financial and other barriers to contraceptives (Culwell & Feinglass, 2007; Dennis et al., 2012; Jacobs & Stanfors, 2011; Nearns, 2009). Out-of-pocket costs have been found to matter, as well, with low-cost and no-cost contraceptive access leading to increased use, and lower rates of pregnancy, birth, and abortion (Gariepy, Simon, Patel, Creinin, & Schwarz, 2011; Postlethwaite, Trussell, Zoolakis, Shabear, & Petitti, 2007; Secura et al., 2014).

Finally, I expect that increased pregnancy prevention efforts and use of prescription contraceptives will lead to decreases in the likelihood of an unintended birth. When used correctly, contraceptives are effective at preventing pregnancy, with estimates of 12 million pregnancies averted annually by consistent contraceptive use (Guttmacher Institute, 2015; Trussell, 2007). In addition to this specific pathway through which state contraceptive mandates are expected to decrease the likelihood of unintended births, the Andersen &

Aday model includes other medical, personal, and structural factors that may contribute to an individual's likelihood of unintended birth (R. Andersen & Aday, 1978; R. M. Andersen, 1995; Nearns, 2009).

Study Design

Data

Pregnancy Risk Assessment Monitoring System

PRAMS is a mixed-mode, population-based, state-specific surveillance system of selected maternal behaviors and experiences during pregnancy and following childbirth (Gilbert, Shulman, Fischer, & Rogers, 1999). PRAMS data provide a unique sample of state-identified pregnancies ending in live births, key variables of maternal attitudes and experiences before and during pregnancy, and infant health outcomes, all of which are necessary to evaluate the impact of state prescription contraception insurance mandates on women's pregnancy prevention activities, difficulty accessing birth control, and intendedness of birth. The PRAMS population of interest is mothers who gave birth to a live infant during a state's surveillance period. Women are sampled through identification using state birth-certificate files so as to be representative of births at the state level (Gilbert et al., 1999). Participating states use their own sampling design, but all oversample births at risk of poor outcomes (Shulman, Gilbert, & Lansky, 2006). PRAMS then uses a mixed-mode method of data collection, reaching sampled women by both mail and phone about 4-6 months following delivery (Gilbert et al., 1999). This study design has led to response rates ranging from 66-80% across states in 1996 and 49-84% across states in 2001 (Gilbert et al., 1999; Shulman et al., 2006). PRAMS data are available only in state-years that achieve a survey response rate of 70% for years 2006 and earlier, and a response rates of

65% for years 2007 and later (Centers for Disease Control and Prevention, 2016c). Currently, 40 states and NYC participate in PRAMS, representing approximately 78% of all US live births (Centers for Disease Control and Prevention, 2016c).

The design of PRAMS makes it particularly useful for the analysis of the effect of state contraceptive coverage mandates on unintended births. PRAMS asks questions that are similar to those in other surveys of maternal and child health, such as the National Survey of Family Growth (NSFG), including intendedness of birth (Mosher, W.D. et al., 2012). Compared to these other surveys, however, PRAMS collects data annually, rather than periodically, and also collects state-level data, rather than only national data (Centers for Disease Control and Prevention, 2016a; D'Angelo et al., 2004; Gilbert et al., 1999; Raissian & Lopoo, 2014). Finally, PRAMS asks women their insurance status pre-pregnancy, allowing for the stratification of the sample by insurance status at the time of conception. This allows for the measurement of pregnancy prevention efforts, barriers to birth control access, and intendedness of birth for privately insured recent mothers in each state-year in the sample.

State Contraceptive Coverage Mandates

State contraceptive coverage mandates were identified through a review of reports from the Guttmacher Institute, the National Conference of State Legislators, the Center for Reproductive Rights, and prior studies ("Contraceptive Equity Laws in the States," 2014, Guttmacher Institute, 2012, "Insurance Coverage for Contraception State Laws," 2012; Dills & others, 2014; Mulligan, 2015; Raissian & Lopoo, 2014). State mandates are defined as state regulations requiring that insurers cover FDA-approved contraception if any other prescription drugs are covered (Guttmacher Institute, 2012).

Study Sample

State-years are included in this analysis based on the presence (or absence) of a contraceptive coverage mandate and the years of availability in PRAMS. The study sample includes 11 treatment states that implemented contraceptive coverage mandates 2000-2008 and 13 control states that did not implement contraceptive coverage mandates (Table 1). The remaining 26 states and the District of Columbia are excluded from the study due to a lack of participation in PRAMS or missing data years surrounding mandate implementation (Table 2). The state of Texas chose not to release their PRAMS data to be used in this study.

Analytic Strategy

Individual-Level Models

First, individual-level analysis uses a quasi-experimental study design exploiting variation in the year of implementation of state prescription contraception coverage mandates using a two-way fixed-effect method. I create a dummy variable indicating the presence or absence of a state contraception coverage mandate for each state-year based on the year of mandate implementation. I then use logistic and multinomial logistic analysis of pooled PRAMS data to estimate the effect of a mandate on the likelihood of each dichotomous measure of the three outcomes of interest: pregnancy prevention efforts, problems getting birth control, and unintended birth. These models compare the treatment group of privately insured recent mothers in state-years with mandates to privately-insured recent mothers in state-years without mandates. All models include state and year fixed effects, robust standard errors clustered at the state level, and PRAMS survey-weights. The base version of these models is presented below:

$$P(Y)_{ist} = \beta_0 + \beta_1 Mandate_{ist} + \beta_2 X_{ist} + \beta_3 Z_{st} + U_s + T_t + \epsilon$$

Where $P(Y)_{ist}$ is the probability of an outcome variable for a mother (i) in state (s) during year (t); $Mandate_{st}$ is a dummy variable indicating the presence of a contraception coverage mandate in state (s) during year (t); X_i is a vector of individual characteristics for mother (i); Z_{st} is a measure of the percentage of employees insured through self-insured firms in state (s) during year (t); U_s is a state effect; T_t is a year effect; and ϵ is an unobserved error term.

Within treatment and control state-years, the analytic sample is limited to women with private health insurance, because state contraception coverage mandates apply specifically to private health insurance plans. Identification of mothers with private health insurance in PRAMS is based on the hierarchy defined by Gavin et al (2007) (Gavin, Adams, Manning, Raskind-Hood, & Urato, 2007). Descriptive statistics for this individual analysis are reported for the full analytic sample as well as separately for privately insured women exposed to a mandate and privately insured women not exposed to a mandate (Tables 3-5). The resulting unweighted sample includes 116,772 privately insured women.

A possible concern of limiting the sample to privately insured women is that it assumes private insurance coverage is independent of the mandate. It is possible, however, that women choose to purchase private health insurance because of the implementation of the mandate. Raissian and Lopoo test this assumption and find no evidence that women switch to private insurance following mandate implementation (Raissian & Lopoo, 2014).

State-Level Models

In addition to individual-level analysis, I conduct state-level analysis in order to provide a policy-relevant estimate of the number of unintended births averted by state

prescription contraceptive mandates. This state-level analysis uses the same quasi-experimental study design as the individual-level analysis, exploiting variation in the year of implementation of state prescription contraception coverage mandates described above. Whereas individual level analysis estimated the effects of mandates on the likelihood of a women having an unintended birth and other outcomes, this state-level analysis estimates the effect of mandates on the number of unintended births in a state, controlling for the total number of births. This relationship is modeled using the equation:

$$Y_{st} = \beta_0 + \beta_1 Mandate_{st} + \beta_2 Births_{st} + \beta_3 X_{st} + \beta_4 Z_{st} + U_s + T_t + \epsilon$$

Where Y_{st} is the number of unintended births in state (s) during year (t); $Mandate_{st}$ is a dummy variable indicating the presence of a contraception coverage mandate in state (s) during year (t); $Births_{st}$ is the number of total births in state (s) during year (t); X_i is a vector of state-level covariates; Z_{st} is a measure of the percentage of employees insured through self-insured firms in state; U_s is a state effect; T_t is a year effect; and ϵ is an unobserved error term.

As with the individual-level analysis, the study sample is limited to privately insured women. Thus, the counts of unintended pregnancy and total births are among privately insured women. The state-level covariates are similarly the means of these measures across privately insured women in each state-year. The resulting sample includes 159 state-years.

Measures

Pregnancy Prevention Efforts

This analysis includes four measures of pregnancy prevention efforts: pregnancy prevention pre-conception; pregnancy prevention post-partum; IUD use post-partum; and

birth control pill use post-partum. Pregnancy prevention pre-conception is a dichotomous measures of mothers' responses to the yes/no question: *When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant?* Pregnancy prevention post-partum is a dichotomous measures of mothers' responses to the yes/no question: *Are you or your husband or partner doing anything now to keep from getting pregnant.* IUD use post-partum and birth control pill use post-partum are also yes/no measures constructed from mothers' responses to the question: *What kind of birth control are you or your husband or partner using now to keep from getting pregnant?* to which mothers were asked to list all methods that applied. Not all women in the analytic sample responded to these questions, resulting in smaller unweighted sample sizes for the analysis of these outcomes than for pregnancy intent (pregnancy prevention pre-conception: 59,655; pregnancy prevention post-partum: 99,947; IUD use post-partum: 25,193; birth control pill use post-partum: 51,481).

Problems Getting Birth Control

Problems getting birth control is measured two ways. Problems getting birth control pre-conception is a yes/no measure indicating a mothers' response of *I had problems getting birth control when I needed it* to the question *What were your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant?* Can't pay for birth control post-partum is a yes/no measure indicating a mother's response of *I can't pay for birth control* to the question and *What are your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant now?* Again, not all women in the analytic sample responded to these questions, resulting in smaller unweighted sample sizes for the analysis of these outcomes than for pregnancy intent

(problems getting birth control pre-conception: 23,081; can't pay for birth control post-partum: 17,011).

Unintended Birth

Unintended birth is measured as unintended/not-unintended using a constructed dichotomous measure to account for changes in PRAMS questionnaires over time. For years 1996-2011, answer choices to the question *Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?* included: 1) *I wanted to be pregnant sooner*; 2) *I wanted to be pregnant later*; 3) *I wanted to be pregnant then*; and 4) *I didn't want to be pregnant then or at any time in the future*. In 2012, a fifth answer choice was added to the questionnaire: 5) *I wasn't sure what I wanted*. Pregnancies are classified as unintended if a mother answered either that she wanted to be pregnant later or that she didn't want to be pregnant then or at any time in the future. Pregnancies are classified as intended if a mother answered either that she wanted to be pregnant then or that she wanted to be pregnant sooner. Pregnancies in 2012 for which the mother answered that she wasn't sure what she wanted are classified based on her answer to a second question: *When you got pregnant with your new baby, were you trying to get pregnant?* Births about which mothers weren't sure how they felt but *were not* trying to get pregnant are the classified as unintended. Births about which mothers weren't sure how they felt but *were* trying to get pregnant are classified as not-unintended. Finally, a categorical measure was constructed for multinomial logit models. This measure is 0 if a birth was not-unintended, 1 if the birth was mistimed, and 2 if the birth was unwanted. Mistimed births are those for which a mother answer that she wanted to be pregnant later. Unwanted births are those for which a mother did not want to be pregnant then or in the future. Births in

2012 about which a mother was unsure how she felt (377 births) are excluded from this multinomial analysis.

Covariates

All models include a series of categorical individual-level control variables to account for maternal characteristics that may impact the effect of a contraceptive coverage mandate on the outcomes described above. Maternal age is measured in the categories: under 18; 18-19; 20-24; 25-29; 30-34; 35-39; and 40 and over. Maternal education measures a mother's highest educational attainment in the categories: no high school; some high school; high school graduate; some college; and college graduate or more. Maternal race is measured as white; black; or other. Maternal ethnicity is a dichotomous measure of Hispanic ethnicity and maternal urban residence is a dichotomous measure of urban residence. The number of prior live births is counted in the categories: 0; 1; 2; 3-5; 6 or more. The number of prior terminations is counted in the categories: 0; 1; 2; 3; 4; 5 or more. Finally, two dichotomous measures are included to capture whether a mother smoked three months before her pregnancy and whether a mother drank three months before her pregnancy.

In addition to individual-level measures, the percentage of private-sector enrollees that are enrolled in self-insured plans at establishments that offer health insurance is controlled for at the state level. This data is merged to the PRAMS data from the Medical Expenditure Panel Survey Insurance Component (MEPS-IC) (Medical Expenditure Panel Survey, 2016).

State-level analyses include the state-year means of the individual-level measures described above. Race is measured as the percent of mothers who are white; ethnicity as

the percent of mothers who are Hispanic; and urban residence as the percent of mothers who live in urban areas. Age is measured as the percent of mothers under age 20; education as the percent of mothers with a high school degree or more education. Percentages of mothers who smoked three months before pregnancy; drank three months before pregnancy; had a prior live birth; and had a prior termination are also controlled for. The same measure of percentage of private insurance enrollees who are covered by a self-insured plan is used for state-level analysis as was used for individual-level analysis. Finally, state-level models control for the total number of births in each state-year. All aggregate measures are limited to the analytic sample of privately insured women.

Sensitivity Analysis

Consistent with prior studies, I conduct sensitivity analysis testing the models on non-privately insured women (publicly insured and uninsured) as a falsification test, with the expectation that the implementation of state contraceptive mandates will have no effect on women who are not privately insured (Atkins & Bradford, 2014).

Results

Individual-Level Analysis

From 1996-2012, approximately 42.36% of births were unintended among the full sample of women (Table 3). A smaller percentage of births, 32.42%, were unintended among privately insured women. Mistimed births were more common than unwanted births (26.71% vs 9.84% for privately insured women). Nearly 37% of privately insured women were engaged in pregnancy prevention efforts when they got pregnant. Post-partum, 85% of women were engaged in such efforts. The percentage of women reporting barriers to contraception was low: 4.47% expressed problems getting birth control pre-pregnancy and

3.21% state that they could not pay for birth control post-partum. Additional descriptive statistics are presented in Tables 4 and 5.

Individual-level analysis results support my hypothesis that contraceptive coverage mandates decreased the likelihood of unintended births among privately insured women (Table 6). The presence of a mandate decreased the likelihood that a mother's recent birth was unintended by 1.99 percentage points ($p < 0.05$) and decreased the likelihood of a mistimed birth by 2.18 percentage points ($p < 0.01$). No effect was found for unwanted births. When modeled as a multinomial logit with the outcomes not-unintended birth, mistimed birth, and unwanted birth, results are similar. Mandates increased the likelihood of a not-unintended birth by 1.94 percentage points ($p < 0.05$) and decreased the likelihood of a mistimed birth by 1.92 percentage points ($p < 0.05$).

The analytic results do not support my second hypothesis, that contraceptive coverage mandates increased the likelihood that women with a recent live birth were engaged in pregnancy prevention. No effect of mandates was found on the likelihood that women were engaged in pregnancy prevention efforts when they got pregnant. Mandates did affect the likelihood that women were engaged in these activities post-partum, but the effect is opposite of my hypothesis: mandates decreased the likelihood that women were engaged in these activities post-partum by 1.09 percentage points ($p < 0.01$). Analysis of the use of specific prescription contraceptives finds that mandates increased the likelihood of IUD use post-partum by 3.29 percentage points ($p < 0.001$) and decreased the likelihood of pill use post-partum by 16.27 percentage points ($p < 0.001$).

Finally, results of analysis of the effect of contraceptive coverage mandates on barriers accessing contraception are mixed. Mandates decreased the likelihood that women

experienced problems getting birth control pre-conception by 1.69 percentage points ($p < 0.05$) but no effect was found for women's inability to pay for birth control post-partum.

State-Level Analysis

Consistent with my hypothesis, contraceptive coverage mandates decreased the number of unintended births among privately insured women in a state, on average, by 646 births ($p < 0.01$). They also decreased the number of mistimed births by 766 births ($p < 0.05$) but, as in the individual-level analysis, had no effect on unwanted births. (Tables 7 & 8)

Sensitivity Analysis

Sensitivity analysis was conducted by testing the same models described above on the population of non-privately insured women. For most models, the expected result of no effect on this population (which was not targeted by the mandates) was found. The effect of mandates was significant among non-privately insured women for three outcomes: pregnancy prevention efforts pre-conception, IUD post-partum, and pill use post-partum. Mandates were found to increase the likelihood of pregnancy prevention efforts when a woman got pregnant by 3.80 percentage points ($p < 0.01$). Mandates were also found to increase IUD use post-partum by 4.73 percentage points ($p < 0.01$) and decrease pill use post-partum by 5.02 percentage points ($p < 0.001$). As expected, mandates did not have a significant effect on the number of unintended, mistimed, or unwanted births among non-privately insured women at the state level. Additional sensitivity analysis results are included in Appendix C.

Discussion

State contraceptive coverage mandates have been effective at reducing the likelihood of an unintended birth for privately insured women and decreasing the number of unintended births among privately insured women within states. The observed decline in the likelihood of an unintended birth reduces the average likelihood among privately insured women from 32.42% to 30.43-30.48%, depending on the model. This decline is largely achieved through the reduced likelihood of a mistimed birth, from 26.71% to 24.53-24.79%. When measured at the state level, mandates reduced the average number of unintended births among privately insured women from 11,859 to 11,213 (a 5% reduction of 646 births). Again, this effect was primarily due to a decline in mistimed births, from 9,068 to 8,302 (an 8% reduction of 766 births). This reduction in unintended births has the potential to result in improved child health outcomes, reduce costs to women, and move closer toward the Healthy People 2020 goal of 56% or fewer of all pregnancies being unintended.

The observed effect on mistimed but not on unwanted birth may be due in part to the characteristics of women who experience each type of unintended birth. Prior literature has suggested that women who have achieved their desired family size may report an additional birth as unwanted, whereas women who report mistimed births plan on expanding their family size in the future (Campbell & Mosher, 2000; D'Angelo et al., 2004). While the models control for age and prior births, individual women's family size preferences and timeline can vary across these measures and are not controlled for in this analysis. It may be that women who *never* want to become pregnant are willing to pay more for prescription contraceptives or make health insurance coverage decisions based on the coverage of prescription contraceptives whereas women who do plan to become pregnant

in the future may not prioritize contraception the same way. Thus, prescription contraceptive mandates would be expected to have a smaller effect on unwanted births than on mistimed birth.

The effects of mandates on the pathways through which mandates may impact unintended births are less clear, as I do not find that mandates increased pregnancy prevention efforts, my hypothesized pathway of the effect of mandates on unintended births. This null finding may be due, in part, to the measurement of pregnancy prevention in the PRAMS dataset. The measure of pregnancy prevention efforts at the time women got pregnant captures not only contraceptive use, but also its failure, because the sample is limited to women who experienced a birth despite pregnancy prevention efforts. Additionally, the measure does not discern between the most effective methods of contraceptives (such as sterilization, implants, and IUDs) and efforts including withdrawal and the rhythm method. Therefore, changes in the type of contraception use, such as a shift from withdrawal to IUD use, are not captured by this measure.

An overall increase in the number of women using contraceptives may be expected to increase the likelihood of pregnancy prevention efforts before pregnancy, acknowledging that there may contraceptive failure. A shift to more effective methods, however, would be expected to decrease the likelihood of pregnancy prevention efforts before pregnancy due to a decrease in failure rates as more effective methods replace less effective ones. During this time period, the percentage of women using long acting reversible contraceptives, among the most effective methods, increased five-fold from 1.5% in 2002 to 7.2% in 2012 (Branum & Jones, 2015). This national trend may partially explain the lack of impact on pregnancy prevention, as measured in the PRAMS survey, if

women are using more effective methods and thereby avoiding pregnancy and capture in the survey population.

The observed decrease in the likelihood of pregnancy prevention efforts post-partum from 85.15% to 84.06% is the opposite of my hypothesized effect. While post-partum contraceptive use occurs outside of the primary causal pathway of mandates on the intendedness of a new mother's existing birth, it is expected that the increased access to contraception would apply to new mothers as well as non-mothers. Further research is necessary to investigate the cause of this negative effect of mandates on post-partum pregnancy prevention. When post-partum contraceptive use is measured by type of contraception, mandates increased the likelihood of IUD use post-partum from 8.81% to 12.10% while decreasing the likelihood of pill use post-partum from 36.17% to 19.90%. Both of these effects were also observed in the sample of non-privately insured women. This cross-population effects suggest the possibility of a co-occurring shift in contraception use from the pill to IUDs that was independent of the contraceptive coverage mandates. Alternatively, this shift could have been motivated by an increased awareness and popularity of IUDs across populations as they become more affordable to privately-insured women due to mandates. Again, further research is necessary to understand the relationship between mandates and contraceptive choice during this time period.

Finally, my hypothesis that mandates would reduce barriers to contraceptives is supported for the pre-conception period, with an observed effect that decreases the percentage of privately insured women reporting problems getting birth control from 4.47% to 2.78%. This result suggests that mandates decreased the likelihood of an unintended birth by removing barriers to getting birth control prior to pregnancy and may

capture women's ability to better access effective prescription contraceptive methods. No such effect was found for women's inability to pay for birth control in the post-partum period.

Strengths and Limitations

The analysis in this study is limited by questions asked in the PRAMS questionnaire. Notably, I am not able to specifically measure use of prescription contraceptives pre-conception because the PRAMS questionnaire does not differentiate between types of pregnancy prevention efforts including natural family planning, the rhythm method, withdrawal, prescription birth control, and sterilization (Centers for Disease Control and Prevention, 2016c). Similarly, financial barriers to prescription contraceptives are not directly measured by the survey for the pre-conception period. Instead, I use the frequency of mothers' response of "I had trouble getting birth control when I needed it," which may capture other barriers to contraceptives not addressed by state mandates (Centers for Disease Control and Prevention, 2016c).

My analysis includes all privately insured mothers, even though ERISA allows self-insuring firms to be exempt from state insurance regulations including contraceptive mandates. Therefore, these results are likely to be an underestimate of the effect of state mandates on women who were enrolled in the fully-insured plans affected by the mandate. Similarly, this study is not able to capture whether plans already chose to voluntarily cover prescription contraceptives or the range of co-payments required for newly covered prescription contraceptives.

As with all PRAMS analysis, the sample is limited to those unplanned pregnancies that lead to birth and analysis is unable to capture unintended pregnancies that resulted in

abortion or miscarriage. PRAMS is a retrospective survey, and women who have given birth to a child may characterize the intendedness of their pregnancy differently than they did earlier during their pregnancy (Santelli et al., 2003). Finally, state participation in PRAMS is voluntary and participating state data is only made available if the response rate meets the required level. This leads to states moving into and out of the sample over time, creating an unbalanced panel.

Despite these limitations, this study provides important contributions to the current literature. It is the first study to use PRAMS data to analyze the effects of state contraceptive coverage mandates. The use of PRAMS allows for numerous improvements over studies using BRFSS and NSFG data including: 1) the ability to limit the sample to women with private health insurance three months prior to pregnancy; 2) the use of state-representative samples to analyze the effects of state-level policy; and 3) access to continuous years of data rather than cohorts spaced periodically over time. Second, this study moves beyond measuring the effects of mandates on contraceptive use to answer the important research question of the effect of state mandates on unintended births. Finally, while not fully generalizable, these results can inform expectations for both the ACA contraceptive mandate and for our nation's progress toward achieving Healthy People 2020 family planning goals.

Policy Implications

Based on the effects of state contraceptive coverage mandates, it can be expected that the ACA contraceptive mandate will reduce the likelihood that a women has an unintended birth and the number of unintended births in the United States. The effect of the mandate will be larger for populations that faced greater barriers to access prior to the

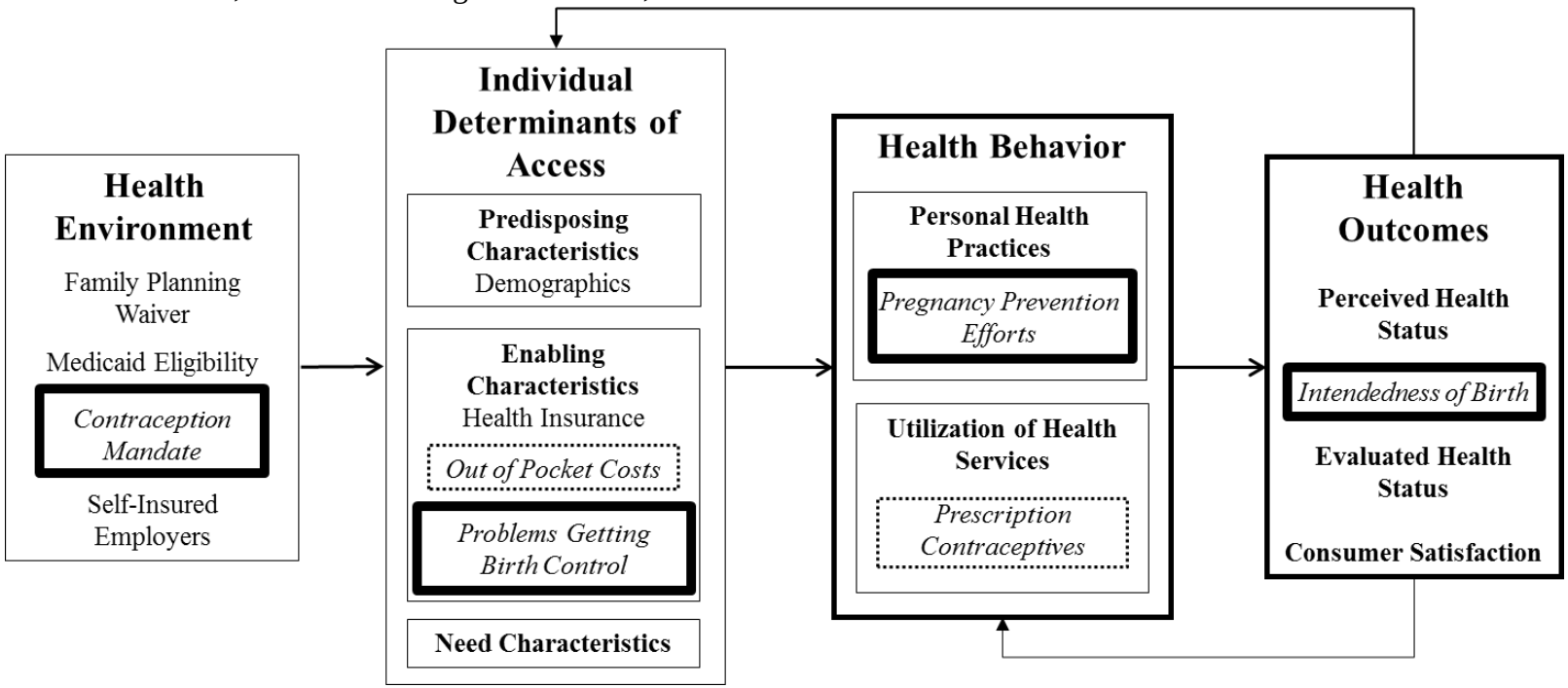
ACA. These groups include previously uninsured women and privately insured women in states without contraceptive coverage mandates whose plans did not voluntarily cover contraceptives. Whereas the state mandates only required parity in coverage between contraceptives and other prescriptions, the ACA requires that all plans cover contraceptives with no cost sharing. Thus, even women whose private insurance previously covered prescription contraceptives stand to benefit through the elimination of all costs related to the purchase of prescription contraceptives.

State contraception mandates are not identical to the contraceptive mandate included in the ACA. First, as noted above, self-insured plans are excluded from state mandates but included in the ACA mandate. Second, the ACA mandate eliminates all cost sharing for prescription contraceptives, while state mandates required plans cover contraceptives at the level of other prescription drugs, often requiring copayments and deductibles (Atkins & Bradford, 2014). Finally, the ACA mandate is implemented in conjunction with expanded access to private insurance, while state mandates generally only affected women already privately insured (Mulligan, 2015; Raissian & Lopoo, 2014). All told, these differences suggest the identified effects attributable to state contraception coverage mandates may be lower than the potential effects of the ACA mandate (Atkins & Bradford, 2014; Mulligan, 2015; Raissian & Lopoo, 2014).

The differences between state contraceptive mandate policies and the ACA contraceptive mandate suggest that the reduction in unintended births due to the ACA will be larger in magnitude than the effects observed from state contraceptive parity mandates. Thus, the ACA contraceptive mandate has the potential to reduce unintended births,

improve child health outcomes, and reduce costs at a large scale. Continued research and evaluation is necessary to determine how well the ACA mandate achieves these goals.

Figure 1. Conceptual Framework of the Relationship Between State Contraceptive Coverage Mandates and Pregnancy Prevention Efforts, Problems Getting Birth Control, and Unintended Births



Note: Author's adaptation of the Andersen & Aday behavioral model of access to health care(R. Andersen & Aday, 1978; R. M. Andersen, 1995)

Table 1. Study State Classifications

Treatment States	Years Pre-Mandate	Years Post-Mandate	Control States	Years
Arkansas	1997-2005	2006-2012	Alabama	1996-2003
Illinois	1997-2003	2004-2010	Alaska	1996-2010
Maine	1996-2000	2001-2012	Florida	1996-2005
Michigan	2001-2006	2007-2012	Louisiana	1998-2004
New Jersey	2002-2006	2007-2012	Minnesota	2002-2012
New Mexico	1997-2001	2002-2005	Nebraska	2000-2012
New York	1996-2002	2003-2008	Ohio	1999-2003
North Carolina	1997-1999	2000-2005	Oklahoma	1997-2012
Oregon	2003-2007	2008-2012	Pennsylvania	2007-2012
Washington	1996-2001	2002-2012	South Carolina	1996-2007
West Virginia	1996-2005	2006-2011	Tennessee	2008-2009
			Utah	1999-2012
			Wyoming	2007-2011

Table 2. Excluded States

State	Reason For Exclusion
Arizona	No PRAMS Data
California	Mandate effective date not within available PRAMS years
Colorado	Mandate effective date not within available PRAMS years
Connecticut	No PRAMS Data
Delaware	Mandate effective date not within available PRAMS years
District of Columbia	No PRAMS Data
Georgia	Mandate effective date not within available PRAMS years
Hawaii	Mandate effective date not within available PRAMS years
Idaho	No PRAMS Data
Indiana	No PRAMS Data
Iowa	No PRAMS Data
Kansas	No PRAMS Data
Kentucky	No PRAMS Data
Maryland	Mandate effective date not within available PRAMS years
Massachusetts	Mandate effective date not within available PRAMS years
Mississippi	No consecutive years of PRAMS Data
Missouri	Mandate effective date not within available PRAMS years
Montana	Mandate effective date not within available PRAMS years
Nevada	No PRAMS Data
New Hampshire	No PRAMS Data
North Dakota	Only one year of PRAMS data
Rhode Island	Mandate effective date not within available PRAMS years
South Dakota	No PRAMS Data
Texas	Self-excluded from study
Vermont	Mandate effective date not within available PRAMS years
Virginia	No PRAMS Data
Wisconsin	Mandate effective date not within available PRAMS years

Note: Texas did not allow its PRAMS data to be used for this analysis

Table 3. Descriptive Statistics by Sample: Dichotomous Variables

Variable	Full Sample		Privately Insured Sample		Privately Insured, No Mandate		Privately Insured, Mandate	
	Count	**Percent**	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**
Unintended Birth	7,942,357	42.36%	3,744,052	32.42%	2,717,616	33.32%	1,026,436	30.26%
Mistimed Birth	5,948,874	35.35%	2,856,082	26.71%	2,072,492	27.52%	783,590	24.77%
Unwanted Birth	1,919,154	14.99%	854,995	9.84%	626,319	10.30%	228,676	8.77%
Engaged in Pregnancy Prevention Efforts Pre-Conception	4,367,231	38.46%	2,197,671	36.79%	1,591,278	33.98%	606,393	46.95%
Engaged in Pregnancy Prevention Efforts Post-Partum	13,072,491	84.74%	8,073,032	85.15%	5,216,278	85.80%	2,856,753	83.99%
Birth Control Post-Partum: IUD	450,549	9.46%	247,368	8.81%	135,454	8.36%	111,915	9.42%
Birth Control Post-Partum: Pill	2,755,341	32.62%	1,837,969	36.17%	1,388,655	37.71%	449,314	32.11%
Problems Getting Birth Control Pre-Conception	343,592	7.49%	96,168	4.47%	66,698	4.71%	29,471	4.02%
Can’t Pay for Birth Control Post-Partum	173,618	5.79%	57,101	3.21%	45,065	3.61%	12,036	2.28%
Mandate Present: Contraception Year	5,665,656	29.43%	3,438,156	29.13%	0	0%	3,438,156	100%
Hispanic	2,663,376	13.83%	928,903	7.87%	643,690	7.70%	285,213	8.30%
Urban	6,250,711	65.83%	3,851,791	67.26%	3,270,981	67.72%	580,810	64.79%
Mother Smoked 3 Months Before Pregnancy	4,661,772	24.75%	2,179,558	18.78%	1,573,371	19.18%	606,187	17.83%
Mother Drank 3 Months Before Pregnancy	9,294,754	49.41%	6,416,640	55.40%	4,347,075	53.02%	2,069,565	61.18%
Note: Counts are weighted using PRAMS survey weights								

Table 4. Descriptive Statistics % Percent of Private-Sector Enrollees Enrolled in Self-Insured Plans

Sample	**Mean**	**Min**	**Max**	**Unweighted N**	**Weighted N**
Full Sample	.519	.279	.738	404,939	18,765,583
Privately Insured	.514	.279	.738	226,108	11,548,800
Privately Insured Treatment	.538	.403	.681	53,425	3,438,156
Privately Insured Control	.504	.279	.738	172,932	8,064,619

Table 5. Descriptive Statistics by Sample: Categorical Variables, Weighted Counts

Variable	Full Sample		Privately Insured		Privately Insured, No Mandate		Privately Insured, Mandate	
	Count	**Percent**	**Count**	**Percent**	**Count**	**Percent**	**Count**	**Percent**
Maternal Age	N=19,252,412		N=11,800,593		N=8,362,513		N=3,438,079	
<=17	699,717	3.63%	288,576	2.45%	222,708	2.66%	65,867	1.92%
18-19	1,357,565	7.05%	470,391	3.99%	351,041	4.20%	119,350	3.47%
20-24	4,696,372	24.39%	1,872,902	15.87%	1,410,983	16.87%	461,919	13.44%
25-29	5,424,071	28.17%	3,571,662	30.27%	2,553,878	30.54%	1,017,784	29.60%
30-34	4,518,900	23.47%	3,565,294	30.21%	2,462,577	29.45%	1,102,717	32.07%
35-39	2,113,652	10.98%	1,690,812	14.33%	1,140,178	13.63%	550,634	16.02%
40+	442,134	2.30%	340,957	2.89%	221,148	2.65%	119,809	3.49%
Maternal Education	N=19,018,023		N=11,675,554		N=8,269,702		N=3,405,852	
No HS	819,527	4.31%	158,327	1.36%	100,343	1.21%	57,984	1.70%
Some HS	2,676,742	14.07%	741,345	6.35%	551,444	6.67%	189,901	5.58%
HS Graduate	5,696,236	29.95%	2,797,783	23.96%	2,120,986	25.65%	676,797	19.87%
Some College	4,591,811	24.14%	3,159,136	27.06%	2,266,887	27.41%	892,249	26.20%
College	5,233,706	27.52%	4,818,964	41.27%	3,230,042	39.06%	1,588,922	46.65%
Maternal Race	N=19,254,435		N=11,802,084		N=8,363,928		N=3,438,156	
White	14,680,965	76.25%	9,652,225	81.78%	6,882,980	82.29%	2,769,245	80.54%
Black	2,952,431	15.33%	1,292,708	10.95%	961,872	11.5%	330,835	9.62%
Other	1,621,039	8.42%	857,152	7.26%	519,075	6.21%	338,076	9.83%
Prior Live Births	N=19,157,645		N=11,746,153		N=8,328,179		N=3,417,974	
0	7,863,748	41.05%	4,982,457	42.42%	3,506,763	42.11%	1,475,694	43.17%
1	6,267,337	32.71%	4,032,375	34.33%	2,860,777	34.35%	1,171,598	34.28%
2	3,080,785	16.08%	1,804,252	15.36%	1,289,538	15.48%	514,714	15.06%
3-5	1,796,892	9.38%	873,006	7.43%	632,864	7.60%	240,142	7.03%
6+	148,882	0.78%	54,063	0.46%	38,237	0.46%	15,825	0.46%
Prior Terminations	N=19,254,435		N=11,802,084		N=8,363,928		N=3,438,156	
0	14,080,008	73.13%	8,581,098	72.71%	6,111,616	73.07%	2,469,482	71.83%
1	3,331,857	17.30%	2,102,817	17.82%	1,478,130	17.67%	624,687	18.17%
2	1,088,952	5.66%	672,498	5.70%	461,615	5.52%	210,883	6.13%
3	358,621	1.86%	215,570	1.83%	147,365	1.76%	68,205	1.98%
4	131,501	0.68%	76,383	0.65%	53,412	0.64%	22,971	0.67%
5+	263,495	1.37%	153,718	1.30%	111,790	1.34%	41,928	1.22%
Note: Counts are weighted using PRAMS survey weights								

Table 6. Marginal Effects of Prescription Contraceptive Mandates on the Likelihood of Unintended, Mistimed, and Unwanted Births, Pregnancy Prevention Efforts, and Barriers

Outcome	Privately Insured Women in Study States		Non-Privately Insured Women in Study States	
	Marginal Effect	**Unweighted N**	**Marginal Effect**	**Unweighted N**
Pregnancy Intent Logit				
Unintended Birth	-0.0199*	116,772	-0.0053	87,404
Mistimed Birth	-0.0218**	107,431	0.0029	74,118
Unwanted Birth	-0.0038	86,260	-0.0197	50,068
Pregnancy Intent Multinomial Logit				
Not-Unintended Birth	0.0194*	116,395	0.0060	86,872
Mistimed Birth	-0.0192*	116,395	0.0085	86,872
Unwanted Birth	-0.0001	116,395	-0.0146	86,872
Pregnancy Prevention Efforts Logit				
Pregnancy Prevention Efforts Pre-Conception	-0.0123	59,655	0.0380**	64,762
Pregnancy Prevention Efforts Post-Partum	-0.0109**	99,947	0.0040	74,478
IUD Post-Partum	0.0329***	25,193	0.0473**	19,550
Pill Post-Partum	-0.1627***	51,481	-0.0502***	38,748
Barriers Logit				
Problems Getting Birth Control Pre-Conception	-0.0169*	23,081	0.0086	29,651
Can't Pay for Birth Control Post-Partum	-0.0097	17,011	0.0236	15,371
Notes: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ Models include state and year fixed effects robust standard errors clustered at the state level, and survey weights				

Table 7. Descriptive Statistics for State-Level Analysis

	Non-Privately Insured Sample				Privately Insured Sample			
Variable	**Mean**	**Std. Dev.**	**Min**	**Max**	**Mean**	**Std. Dev.**	**Min**	**Max**
Mandate	14.47%	35.29%	0%	100%	14.47%	35.29%	0%	100%
Conception Year	2004	4.56	1996	2012	2004	4.56	1996	2012
% Self-Insured ESI	54.86%	8.11%	29.30%	73.80%	54.86%	8.11%	29.30%	73.80%
Unintended Births	13725	12126	494	61335	11859	10014	522	43723
Mistimed Births	10088	8889	344	43587	9068	7719	424	35294
Unwanted Births	3485	3444	151	17749	2678	2422	98	10086
All Births	23991	20153	1289	105450	36433	29031	1505	119822
% White	64.87%	13.41%	40.61%	93.85%	81.99%	7.00%	68.98%	96.09%
% Hispanic	18.51%	12.22%	0.85%	39.23%	6.01%	4.48%	0%	21.99%
% Under Age 20	16.77%	4.84%	2.99%	29.67%	6.33%	2.38%	1.61%	12.20%
% Urban	58.98%	16.16%	0	1	64.03%	18.40%	0%	100%
% Smoke	36.22%	8.85%	16.28%	59.54%	18.20%	4.59%	5.71%	27.88%
% Drink	42.68%	8.64%	26.27%	58.53%	54.11%	14.07%	18.26%	77.20%
% HS or More	65.95%	5.70%	45.97%	79.49%	91.79%	2.58%	81.77%	96.76%
% Any Prior Births	61.52%	4.02%	49.92%	73.40%	57.84%	4.25%	47.27%	69.08%
% Any Prior Termination	25.37%	5.19%	16.42%	42.26%	25.73%	4.10%	17.54%	41.01%
N=159								

Table 8. Effect of State Contraceptive Coverage Mandates on the Number of Unintended, Mistimed, and Unwanted Births by State

	Unintended Birth		**Mistimed Birth**		**Unwanted Birth**	
	Non-Privately Insured Sample	**Privately Insured Sample**	**Non-Privately Insured Sample**	**Privately Insured Sample**	**Non-Privately Insured Sample**	**Privately Insured Sample**
Contraceptive Coverage Mandate	-720.34	-645.73**	-535.78	-765.65*	-395.74	78.38
All Births	0.62***	0.32***	0.4439***	0.25***	0.17***	0.07***
% White	529.19	-1241.88	-39.47	1511.30	192.60	-2793.21
% Hispanic	-1792.22	11528.93	-6186.33	19197.21	665.46	-5716.61
% Under Age 20	4118.06	27537.83*	3947.00	21160.94*	-1518.10	4712.01
% Urban	759.80	-1586.46	1590.35	-1312.94	-345.23	-511.25
% Smoked 3 Months Before Pregnancy	2401.25	-69.88	-1588.67	-1920.24	3052.53	2283.40
% Drank 3 Months Before Pregnancy	-559.72	3967.88	-1621.17	5388.76	1269.27	-1002.28
% Self-Insured ESI	1698.19	-2462.70	2750.51	-1865.72	-1603.11	-1062.65
% HS or More Education	7258.49*	-10333.36	7156.63*	-11826.02	166.74	-518.70
% Any Prior Birth	-3525.58	1075.34	-4511.23*	1747.45	1153.22	-912.94
% Any Prior Termination	-2462.03	1699.57	-3034.47	-1043.69	-162.02	3108.79
Notes: N=159; * p < 0.05 ** p < 0.01 *** p < 0.001 OLS models include state and year fixed effects, robust standard errors clustered at the state level, and survey weights						

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Appendix A: Chapter 1 Sensitivity Analysis

Table A1. Effect of State Resident Partisanship on Children's Medicaid/CHIP Eligibility Levels

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Partisanship (% Democrats)	1.41	1.62*	1.53*	1.34
Democratic Party Control of State Government	16.90*	13.29	15.61*	17.66*
Divided Party Control of State Government	2.39	0.93	2.08	2.58
Ideology, Senate Democrats	0.44	0.37	0.41	0.45
Ideology, Senate Republicans	0.46*	0.38*	0.41*	0.49**
Ideology, House Democrats	-0.39	-0.43	-0.41	-0.37
Ideology, House Republicans	1.36	0.90	1.31	1.42
Race (% White)	-0.01	-0.93	-0.28	0.18
Ethnicity (% Hispanic)	-2.87	-2.30	-2.67	-3.01
Sex (% Female)	2.81	1.88	2.88	2.85
Age (% Children)	2.88	2.67	3.16	2.78
Education (% HS or More)	-1.29	-0.06	-0.81	-1.60
Marital Status (% Single Female Families)	-1.97	-0.80	-2.08	-2.01
Metropolitan Status (% Metropolitan)	-0.51	-0.46	-0.54	-0.50
Uninsurance (Lagged % Children Uninsured)	-1.09	-1.04	-1.20	-1.04
Unemployment (% Unemployed)	-1.91	-1.15	-1.61	-2.11
Poverty (% Below 100% FPL)	0.08	-0.43	0.13	0.11
Total Taxable Resources (per capita, $1000s)	1.24*	1.65**	1.29*	1.18*
FMAP	2.29**	2.24**	2.16**	2.35**
Population (1000s)	0.00	0.00	0.00	0.00
Medicare Wage Index	-70.32	-45.22	-67.13	-73.91
Medicaid Expenditures (Lagged % of Total)	-1.86*	-1.51*	-1.72*	-1.94*
Neighboring States' Mean Eligibility (%FPL)	-0.45**	-0.36***	-0.42**	-0.46**
N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A2. Effect of State Resident Ideology on Children's Medicaid/CHIP Eligibility Levels, Excluding Neighboring States' Mean Eligibility

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Ideology (% Liberal)	2.11*	1.87*	2.11*	2.13*
Democratic Party Control of State Government	13.32	10.45	12.43	13.93
Divided Party Control of State Government	0.39	-0.93	0.12	0.61
Ideology, Senate Democrats	0.51*	0.41*	0.48*	0.53*
Ideology, Senate Republicans	0.39	0.31	0.35	0.42
Ideology, House Democrats	-0.29	-0.35	-0.31	-0.27
Ideology, House Republicans	1.26	0.83	1.20	1.32
Race (% White)	0.77	-0.37	0.43	1.01
Ethnicity (% Hispanic)	-3.47	-2.95	-3.31	-3.58
Sex (% Female)	3.12	1.81	3.20	3.20
Age (% Children)	2.47	2.23	2.54	2.46
Education (% HS or More)	-1.58	-0.27	-1.10	-1.88
Marital Status (% Single Female Families)	-1.82	-0.48	-1.92	-1.89
Metropolitan Status (% Metropolitan)	-0.34	-0.34	-0.38	-0.32
Uninsurance (Lagged % Children Uninsured)	-1.07	-0.91	-1.11	-1.06
Unemployment (% Unemployed)	-2.54	-1.92	-2.24	-2.72
Poverty (% Below 100% FPL)	0.76	0.03	0.77	0.81
Total Taxable Resources (per capita, $1000s)	0.97	1.38*	1.03	0.92
FMAP	1.99*	2.20**	1.88*	2.02*
Population (1000s)	0.01	0.00	0.00	0.01
Medicare Wage Index	-83.88	-58.42	-80.43	-87.44
Medicaid Expenditures (Lagged % of Total)	-1.87*	-1.47*	-1.71*	-1.97*
N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A3. Tests for Multicollinearity in Average Eligibility Full Model

Variable	VIF	SQRT VIF	Tolerance	R-Squared
State Resident Ideology (% Liberal)	3.15	1.77	0.3176	0.6824
Democratic Party Control of State Government	2.7	1.64	0.3707	0.6293
Divided Control of State Government	2.09	1.44	0.4791	0.5209
Ideology, Senate Democrats	6.18	2.49	0.1618	0.8382
Ideology, Senate Republicans	5.83	2.42	0.1714	0.8286
Ideology, House Democrats	9.66	3.11	0.1035	0.8965
Ideology, House Republicans	6.82	2.61	0.1465	0.8535
Race (% White)	2.17	1.47	0.4611	0.5389
Ethnicity (% Hispanic)	4.9	2.21	0.2041	0.7959
Sex (% Female)	2.49	1.58	0.4015	0.5985
Age (% Children)	4.05	2.01	0.2468	0.7532
Education (% HS or More)	9.19	3.03	0.1089	0.8911
Marital Status (% Single Female Families)	4.26	2.06	0.2347	0.7653
Metropolitan Status (% Metropolitan)	2.89	1.7	0.3461	0.6539
Uninsurance (Lagged % Children Uninsured)	2.58	1.6	0.3883	0.6117
Unemployment (% Unemployed)	2.09	1.45	0.4786	0.5214
Poverty (% Below 100% FPL)	4.83	2.2	0.2071	0.7929
Total Taxable Resources (per capita, $1000s)	5.09	2.26	0.1964	0.8036
FMAP	6.3	2.51	0.1587	0.8413
Population (1000s)	3.04	1.74	0.3289	0.6711
Medicare Wage Index	3.93	1.98	0.2544	0.7456
Medicaid Expenditures (Lagged % of Total)	1.74	1.32	0.5741	0.4259
Neighboring States' Mean Eligibility (%FPL)	1.9	1.38	0.5275	0.4725
Year	5.77	2.4	0.1733	0.8267
State	1.19	1.09	0.8438	0.1562
Mean VIF 4.19				

Table A4. Full Model Excluding Ideology, House Democrats and Education (% HS or More) Due to Potential Multicollinearity

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Ideology (% Liberal)	2.07*	1.85*	2.08*	2.09*
Democratic Party Control of State Government	18.96*	15.34*	17.86*	19.72*
Divided Control of State Government	3.52	1.84	3.16	3.81
Ideology, Senate Democrats	0.41*	0.30	0.37*	0.43*
Ideology, Senate Republicans	0.49**	0.40*	0.45*	0.52**
Ideology, House Republicans	1.30	0.84	1.23	1.36
Race (% White)	0.01	-0.93	-0.27	0.20
Ethnicity (% Hispanic)	-2.68	-2.45	-2.61	-2.73
Sex (% Female)	2.97	1.68	3.05	3.05
Age (% Children)	3.73*	2.57	3.47*	3.94*
Marital Status (% Single Female Families)	-1.86	-0.57	-1.97	-1.92
Metropolitan Status (% Metropolitan)	-0.50	-0.43	-0.52	-0.49
Uninsurance (Lagged % Children Uninsured)	-1.00	-0.86	-1.05	-0.99
Unemployment (% Unemployed)	-2.08	-1.53	-1.80	-2.24
Poverty (% Below 100% FPL)	0.48	-0.31	0.46	0.56
Total Taxable Resources (per capita, $1000s)	1.24	1.59**	1.27*	1.19*
FMAP	2.08**	2.34***	1.99**	2.10**
Population (1000s)	0.00	-0.01	0.00	0.00
Medicare Wage Index	-77.44	-52.78	-74.20	-80.85
Medicaid Expenditures (Lagged % of Total)	-1.89*	-1.53	-1.74	-1.98*
Neighboring States' Mean Eligibility (%FPL)	-0.43**	-0.33**	-0.40**	-0.45**
N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A5. Full Model Excluding Unemployment Due to Potential Multicollinearity

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Ideology (% Liberal)	1.95*	1.78*	1.78*	1.78*
Democratic Party Control of State Government	17.93**	14.28*	14.28*	14.28*
Divided Control of State Government	3.18	1.52	1.52	1.52
Ideology, Senate Democrats	0.47*	0.40	0.40	0.40
Ideology, Senate Republicans	0.47*	0.40	0.40	0.40
Ideology, House Democrats	-0.35	-0.41	-0.41	-0.41
Ideology, House Republicans	1.31	0.84	0.84	0.84
Race (% White)	0.25	-0.74	-0.74	-0.74
Ethnicity (% Hispanic)	-3.37	-2.73	-2.73	-2.73
Sex (% Female)	2.96	2.10	2.10	2.10
Age (% Children)	2.45	2.14	2.14	2.14
Education (% HS or More)	-1.39	-0.21	-0.21	-0.21
Marital Status (% Single Female Families)	-1.86	-0.72	-0.72	-0.72
Uninsurance (Lagged % Children Uninsured)	-0.48	-0.46	-0.46	-0.46
Unemployment (% Unemployed)	-1.00	-0.92	-0.92	-0.92
Poverty (% Below 100% FPL)	-0.21	-0.59	-0.59	-0.59
Total Taxable Resources (per capita, $1000s)	1.30*	1.60**	1.60**	1.60**
FMAP	2.23**	2.22**	2.22**	2.22**
Population (1000s)	0.00	0.00	0.00	0.00
Medicare Wage Index	-75.59	-52.19	-52.19	-52.19
Medicaid Expenditures (Lagged % of Total)	-1.87*	-1.51*	-1.51*	-1.51*
Neighboring States' Mean Eligibility (%FPL)	-0.44**	-0.35***	-0.35***	-0.35***
N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A6. Full Model with One Year Led Dependent Variable

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Ideology (% Liberal)	2.45*	2.16*	2.15*	2.16
Democratic Party Control of State Government	7.18	10.19	8.50	7.22
Divided Control of State Government	1.13	3.35	2.50	2.23
Ideology, Senate Democrats	0.38*	0.35	0.39*	0.39*
Ideology, Senate Republicans	0.06	0.07	0.03	0.06
Ideology, House Democrats	-0.44	-0.48	-0.45	-0.45
Ideology, House Republicans	1.22	0.91	1.19	1.30*
Race (% White)	0.54	-0.03	0.39	0.59
Ethnicity (% Hispanic)	-3.16	-3.03	-3.06	-3.25
Sex (% Female)	3.52	2.87	3.55	3.95
Age (% Children)	1.29	2.07	1.75	1.50
Education (% HS or More)	-1.86	-0.84	-1.35	-1.72
Marital Status (% Single Female Families)	-0.50	-0.13	-0.52	-0.65
Metropolitan Status (% Metropolitan)	-0.43	-0.33	-0.34	-0.29
Uninsurance (Lagged % Children Uninsured)	-1.65*	-0.82	-0.76	-0.60
Unemployment (% Unemployed)	0.47	0.35	0.63	0.26
Poverty (% Below 100% FPL)	-1.56	-1.71	-1.80	-1.70
Total Taxable Resources (per capita, $1000s)	0.43	0.97	0.65	0.47
FMAP	1.30	1.66*	1.37	1.44
Population (1000s)	0.00	0.00	0.00	0.00
Medicare Wage Index	-69.60	-54.38	-60.85	-69.17
Medicaid Expenditures (Lagged % of Total)	-1.58*	-1.13	-1.26	-1.41
Neighboring States' Mean Eligibility (%FPL)	-0.27*	-0.24*	-0.26*	-0.28
N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A7. Full Model with One Year Led Eligibility Levels and Party Control

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
State Resident Ideology (% Liberal)	2.39*	1.98*	1.94*	1.96*
Led Democratic Party Control of State Government	1.86	15.94	15.02	13.92
Led Divided Control of State Government	0.07	1.76	0.90	0.27
Ideology, Senate Democrats	2.3*	0.35	0.39*	0.39*
Ideology, Senate Republicans	0.23	0.04	0.01	0.04
Ideology, House Democrats	-1.26	-0.40	-0.37	-0.38
Ideology, House Republicans	1.87	0.88	1.16	1.27
Race (% White)	0.36	-0.05	0.37	0.60
Ethnicity (% Hispanic)	-1.41	-2.35	-2.33	-2.53
Sex (% Female)	0.91	1.59	2.30	2.71
Age (% Children)	0.48	2.09	1.74	1.47
Education (% HS or More)	-0.65	-0.32	-0.90	-1.32
Marital Status (% Single Female Families)	-0.4	-0.03	-0.45	-0.57
Metropolitan Status (% Metropolitan)	-0.98	-0.32	-0.32	-0.27
Uninsurance (Lagged % Children Uninsured)	-2.28*	-0.84	-0.79	-0.61
Unemployment (% Unemployed)	0.38	0.55	0.85	0.45
Poverty (% Below 100% FPL)	-1.07	-1.40	-1.53	-1.44
Total Taxable Resources (per capita, $1000s)	0.59	0.88	0.58	0.39
FMAP	1.11	1.23	0.91	0.98
Population (1000s)	-0.01	-0.00	-0.00	0.00
Medicare Wage Index	-1.18	-60.43	-66.10	-74.82
Medicaid Expenditures (Lagged % of Total)	-2.19*	-1.12	-1.23	-1.39
Neighboring States' Mean Eligibility (%FPL)	-2.28*	-0.23*	-0.25*	-0.27*
N = 606; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A8. Full Model with One Year Lagged State Resident Ideology

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
Lagged State Resident Ideology (% Liberal)	2.30*	2.10*	2.20*	2.25*
Democratic Party Control of State Government	9.10	10.59	10.27	9.40
Divided Control of State Government	-3.62	-1.22	-1.89	-2.41
Ideology, Senate Democrats	0.46*	0.41*	0.45*	0.48*
Ideology, Senate Republicans	0.36*	0.34*	0.32*	0.34*
Ideology, House Democrats	-0.43	-0.45	-0.41	-0.42
Ideology, House Republicans	1.42	0.91	1.29	1.48
Race (% White)	-0.54	-1.55	-0.94	-0.61
Ethnicity (% Hispanic)	-3.29	-2.86	-3.10	-3.25
Sex (% Female)	0.69	0.74	1.10	0.84
Age (% Children)	2.68	2.48	2.81	2.87
Education (% HS or More)	-1.11	-0.56	-0.79	-1.03
Marital Status (% Single Female Families)	-2.02	-0.92	-1.79	-2.21
Metropolitan Status (% Metropolitan)	-0.72	-0.50	-0.57	-0.59
Uninsurance (Lagged % Children Uninsured)	-1.83	-0.94	-1.08	-1.17
Unemployment (% Unemployed)	-2.24	-1.67	-1.84	-2.63
Poverty (% Below 100% FPL)	0.15	-0.47	0.01	0.08
Total Taxable Resources (per capita, $1000s)	0.62	1.16*	0.78	0.64
FMAP	1.99*	2.50***	2.15**	2.18*
Population (1000s)	0.00	0.00	0.00	0.00
Medicare Wage Index	-60.53	-40.36	-49.45	-53.50
Medicaid Expenditures (Lagged % of Total)	-1.54*	-1.35*	-1.55*	-1.70*
Neighboring States' Mean Eligibility (%FPL)	-0.34*	-0.27*	-0.35**	-0.33*
N = 587; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A9. Full Model with One Year Lagged State Resident Ideology and One Year Led Eligibility Levels

Variable	Eligibility Level (% FPL)			
	Average	**Infants**	**Ages 1-5**	**Ages 6-17**
Lagged State Resident Ideology (% Liberal)	2.10*	2.14*	1.98*	1.96*
Democratic Party Control of State Government	2.98	7.00	3.55	2.83
Divided Control of State Government	-2.27	0.96	-1.41	-1.46
Ideology, Senate Democrats	0.49**	0.45*	0.47*	0.48**
Ideology, Senate Republicans	-0.11	-0.12	-0.14	-0.15
Ideology, House Democrats	-0.53	-0.53	-0.52	-0.53
Ideology, House Republicans	1.09	0.86	1.05	1.13
Race (% White)	-0.26	-0.38	-0.34	-0.35
Ethnicity (% Hispanic)	-3.40*	-2.79	-3.22	-3.36
Sex (% Female)	2.08	1.68	2.09	2.46
Age (% Children)	3.05	3.47	3.44	3.30
Education (% HS or More)	-0.02	0.94	0.50	0.16
Marital Status (% Single Female Families)	-0.58	-0.26	-0.52	-0.70
Metropolitan Status (% Metropolitan)	-0.87*	-0.72	-0.79	-0.75
Uninsurance (Lagged % Children Uninsured)	-1.46	-0.81	-0.75	-0.76
Unemployment (% Unemployed)	0.29	0.09	0.28	0.27
Poverty (% Below 100% FPL)	-1.78	-1.80	-1.93	-1.92
Total Taxable Resources (per capita, $1000s)	0.43	0.92	0.64	0.54
FMAP	1.45	1.70*	1.54	1.49
Population (1000s)	0.00	0.00	0.00	0.00
Medicare Wage Index	-44.35	-32.31	-38.43	-39.18
Medicaid Expenditures (Lagged % of Total)	-1.34	-0.94	-1.07	-1.18
Neighboring States' Mean Eligibility (%FPL)	-0.14	-0.15	-0.14	-0.13
N = 587; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Table A10. Summary of Interaction Results on Average Eligibility Level Full Models

Variable	State Resident Ideology * Total Taxable Resources	State Resident Ideology * FMAP	State Resident Ideology * Wage Index	State Resident Ideology * Medicaid Expenditures
Interaction Term	0.08	0.04	7.73	0.01
State Resident Ideology (% Liberal)	-2.52	-0.36	-5.53	1.84
Democratic Party Control of State Government	16.94*	16.14*	18.07*	16.30**
Divided Control of State Government	2.21	2.23	3.11	2.25
Ideology, Senate Democrats	0.44	0.47*	0.46*	0.47*
Ideology, Senate Republicans	0.49*	0.49*	0.49*	0.49*
Ideology, House Democrats	-0.40	-0.36	-0.41	-0.38
Ideology, House Republicans	1.26	1.32	1.28	1.30
Race (% White)	0.30	0.24	0.38	0.23
Ethnicity (% Hispanic)	-3.31	-3.17	-3.26	-3.20
Sex (% Female)	3.04	2.84	2.96	2.92
Age (% Children)	2.40	2.51	2.46	2.40
Education (% HS or More)	-1.62	-1.46	-1.50	-1.49
Marital Status (% Single Female Families)	-1.72	-1.81	-1.81	-1.85
Metropolitan Status (% Metropolitan)	-0.50	-0.54	-0.46	-0.55
Uninsurance (Lagged % Children Uninsured)	-0.97	-1.01	-0.96	-1.00
Unemployment (% Unemployed)	-2.40	-2.25	-2.30	-2.27
Poverty (% Below 100% FPL)	0.15	0.22	0.30	0.24
Total Taxable Resources (per capita, $1000s)	-0.61	1.05	1.01	1.04
FMAP	1.90*	1.44	2.04*	2.23*
Population (1000s)	0.00	0.00	0.00	0.00
Medicare Wage Index	-68.56	-76.25	-243.77*	-76.06
Medicaid Expenditures (Lagged % of Total)	-1.78*	-1.84*	-1.78*	-2.07**
Neighboring States' Mean Eligibility (%FPL)	-0.44**	-0.44**	-0.44**	-0.44
N = 633; Prob > F = 0.0000; * p < 0.05 ** p < 0.1 *** p < 0.001 OLS models including state and year fixed effects; robust standard errors clustered at the state level				

Appendix B: Chapter 2 Sensitivity Analysis

Table B1. Tests for Multicollinearity in Full Continuous Eligibility Model

Variable	VIF	SQRT VIF	Tolerance	R-Squared
State Resident Ideology (% Liberal)	3.1	1.76	0.3228	0.6772
Party Control of State Government (Democratic)	2.9	1.7	0.345	0.655
Party Control of State Government (Divided)	2.1	1.45	0.4772	0.5228
Ideology, Senate Democrats	6.1	2.47	0.164	0.836
Ideology, Senate Republicans	5.83	2.41	0.1715	0.8285
Ideology, House Democrats	9.05	3.01	0.1105	0.8895
Ideology, House Republicans	6.95	2.64	0.1439	0.8561
Race (% White)	2.22	1.49	0.4512	0.5488
Ethnicity (% Hispanic)	4.27	2.07	0.2341	0.7659
Sex (% Female)	2.49	1.58	0.4009	0.5991
Age (% Adults)	3.93	1.98	0.2542	0.7458
Education (% HS or More)	9.17	3.03	0.1091	0.8909
Marital Status (% Single Female Families)	4.26	2.06	0.2345	0.7655
Metropolitan Status (% Metropolitan)	2.9	1.7	0.345	0.655
Uninsurance (Lagged % Uninsured of those in Poverty)	1.86	1.36	0.5381	0.4619
Unemployment (% Unemployed)	2.1	1.45	0.4755	0.5245
Poverty (% Below 100%FPL)	4.59	2.14	0.218	0.782
FMAP	6.23	2.5	0.1604	0.8396
Population (1000s)	3.04	1.74	0.3286	0.6714
Medicare Wage Index	4.06	2.01	0.2464	0.7536
Medicaid Expenditures (Lagged % of Total Expenditures)	1.78	1.34	0.561	0.439
Total Taxable Resources (per capita, $1000s)	5.14	2.27	0.1945	0.8055
Neighboring States' Mean Eligibility (%FPL)	1.5	1.22	0.6675	0.3325
Year	5.22	2.29	0.1915	0.8085
State	1.18	1.09	0.85	0.155

Table B2. Effect of Liberal State Resident Ideology on the Likelihood of Eligibility Expansion and Likelihood of Eligibility Levels At or Above 100% FPL for Parents in Medicaid 1997-2010 Excluding House Democrat Ideology and Education

Variable	Marginal Effects Eligibility Expansion		Eligibility ≥ 100% FPL
	Full Sample	Limited Sample	
State Resident Ideology (% Liberal)	0.0143	0.0340***	0.0436***
Democratic Party Control of State Government	0.1987*	0.1457	0.0559
Divided Party Control of State Government	0.1849**	0.1871***	0.1388
Ideology, Senate Democrats	-0.0004	-0.0009	0.0003
Ideology, Senate Republicans	0.0002	0.0000	0.0037
Ideology, House Republicans	0.0028	0.0015	-0.0025
Race (% White)	0.0065	0.0030	-0.0003
Ethnicity (% Hispanic)	0.0093*	0.0067	0.0019
Sex (% Female)	0.0109	-0.0105	-0.0156
Age (% Adults)	-0.0365**	-0.0287	-0.0053
Marital Status (% Single Female Families)	-0.0008	-0.0074	0.0103
Metropolitan Status (% Metropolitan)	0.0019	0.0037	0.0060*
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.0036	-0.0057	-0.0161***
Unemployment (% Unemployed)	-0.0426*	-0.0458*	0.0030
Poverty (% Below 100%FPL)	-0.0252	-0.0209	-0.0348
FMAP	0.0038	0.0017	0.0198*
Population (1000s)	0.0000	0.0000	0.0000
Medicare Wage Index	0.3852	0.6065	0.6684
Medicaid Expenditures (Lagged % of Total Expenditures)	0.0120*	0.0092	-0.0048
Total Taxable Resources (per capita, $1000s)	-0.0131**	-0.0181***	-0.0060
Neighboring States' Mean Eligibility (%FPL)	0.0013*	0.0017*	-0.0002

Note: Full Sample N=565; Limited Sample N=469; Over 100% FPL Sample N=609
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
Logit models including year fixed effects; robust standard errors clustered at the state level

Table B3. Effect of State Resident Ideology on Parents' Medicaid Eligibility Levels Excluding House Democrat Ideology and Education

Variable	Eligibility Level % FPL	
	Full Sample	**Limited Sample**
State Resident Ideology (% Liberal)	1.78	3.27*
Party Control of State Government (Democratic)	47.93*	45.86*
Party Control of State Government (Divided)	17.80	14.97
Ideology, Senate Democrats	0.05	0.03
Ideology, Senate Republicans	0.44*	0.08
Ideology, House Republicans	-0.23	-0.58
Race (% White)	-0.80	-3.72
Ethnicity (% Hispanic)	0.58	1.82
Sex (% Female)	-0.72	-3.50
Age (% Adults)	-0.36	0.05
Marital Status (% Single Female Families)	-1.04	-0.21
Metropolitan Status (% Metropolitan)	2.18*	1.92
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.80*	-1.12**
Unemployment (% Unemployed)	-1.95	-2.58
Poverty (% Below 100%FPL)	1.89	0.72
FMAP	0.32	0.91
Population (1000s)	0.00	-0.01
Medicare Wage Index	-58.82	-50.50
Medicaid Expenditures (Lagged % of Total Expenditures)	0.81	1.32
Total Taxable Resources (per capita, $1000s)	-0.97	-1.17
Neighboring States' Mean Eligibility (%FPL)	-0.15	-0.15

Note: Full Sample N=609; Limited Sample N=505; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
Logit models including state and year fixed effects; robust standard errors clustered at the state level

Table B4. Effect of State Resident Ideology on Type of Public Health Insurance Expansion for Parents Excluding House Democrat Ideology and Education

Type Classification	**Expansion Type**	**Marginal Effect**
Program Type	No Expansion	-0.0389***
	Medicaid	0.0294**
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0095*
Premium Requirements	No Expansion	-0.0383***
	Medicaid with No Premium	0.0200*
	Medicaid with a Premium	0.0084
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0099*
Benefit Level	No Expansion	-0.0390***
	Medicaid with Full Benefits	0.0257*
	Medicaid with Limited Benefits	0.0033
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0100*
Notes: N=609; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ Multinomial logit models including year fixed effects; robust standard errors clustered at the state level		

Table B5. Effect of Liberal State Resident Ideology on the Likelihood of Eligibility Expansion and Likelihood of Eligibility Levels At or Above 100% FPL for Parents in Medicaid 1997-2010 Excluding Unemployment

Variable	Marginal Effects		
	Eligibility Expansion		Eligibility ≥ 100% FPL
	Full Sample	Limited Sample	
State Resident Ideology (% Liberal)	0.0094	0.0275***	0.0403***
Democratic Party Control of State Government	0.0221**	0.1411	0.0240
Divided Party Control of State Government	0.1845**	0.1843***	0.1238
Ideology, Senate Democrats	-0.0006	-0.0031*	-0.0015
Ideology, Senate Republicans	0.0005	0.0000	0.0036
Ideology, House Democrats	0.0002	0.0028	0.0028
Ideology, House Republicans	0.0026	0.0012	-0.0027
Race (% White)	0.0054	0.0030	-0.0009
Ethnicity (% Hispanic)	0.0116*	0.0063	-0.0013
Sex (% Female)	0.0201	-0.0073	-0.0222
Age (% Adults)	-0.0374*	-0.0303	-0.0009
Education (% HS or More)	0.0041	0.0093	-0.0042
Marital Status (% Single Female Families)	-0.0058	-0.0096	0.0101
Metropolitan Status (% Metropolitan)	0.0007	0.0034	0.0058*
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.0041	-0.0048	-0.0147***
Poverty (% Below 100%FPL)	-0.0326*	-0.0273*	-0.0326
FMAP	0.0073	0.0084	0.0207**
Population (1000s)	0.0000	0.0000	0.0000
Medicare Wage Index	0.0230	0.3819	0.0676
Medicaid Expenditures (Lagged % of Total Expenditures)	0.0142**	0.0127*	-0.0029
Total Taxable Resources (per capita, $1000s)	-0.0080	-0.0105	-0.0050
Neighboring States' Mean Eligibility (%FPL)	0.0011	0.0016*	0.0000

Note: Full Sample N=565; Limited Sample N=469; Over 100% FPL Sample N=609

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Logit models including year fixed effects; robust standard errors clustered at the state level

Table B6. Effect of State Resident Ideology on Parents' Medicaid Eligibility Levels Excluding Unemployment

Variable	Eligibility Level % FPL	
	Full Sample	**Limited Sample**
State Resident Ideology (% Liberal)	1.66	3.17*
Party Control of State Government (Democratic)	47.22**	42.74*
Party Control of State Government (Divided)	18.06	14.10
Ideology, Senate Democrats	0.04	0.06
Ideology, Senate Republicans	0.46*	0.08
Ideology, House Democrats	-0.06	-0.29
Ideology, House Republicans	-0.24	-0.63
Race (% White)	-0.46	-3.35
Ethnicity (% Hispanic)	-0.49	0.21
Sex (% Female)	-0.68	-3.15
Age (% Adults)	2.75	4.47
Education (% HS or More)	-4.07	-5.68*
Marital Status (% Single Female Families)	-1.15	-0.44
Metropolitan Status (% Metropolitan)	2.27*	1.96
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.85*	-1.21**
Poverty (% Below 100%FPL)	0.86	-0.76
FMAP	0.66	1.51
Population (1000s)	0.00	-0.01
Medicare Wage Index	-54.89	-46.95
Medicaid Expenditures (Lagged % of Total Expenditures)	0.70	1.22
Total Taxable Resources (per capita, $1000s)	-0.96	-1.18
Neighboring States' Mean Eligibility (%FPL)	-0.13	-0.14

Note: Full Sample N=609; Limited Sample N=505; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
OLS models including state and year fixed effects; robust standard errors clustered at the state level

Table B7. Effect of State Resident Ideology on Type of Public Health Insurance Expansion for Parents Excluding Unemployment

Type Classification	**Expansion Type**	**Marginal Effect**
Program Type	No Expansion	-0.0353***
	Medicaid	0.0245*
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0108*
Premium Requirements	No Expansion	-0.0342**
	Medicaid with No Premium	0.0249**
	Medicaid with a Premium	-0.0042
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0135*
Benefit Level	No Expansion	-0.0363**
	Medicaid with Full Benefits	0.0264*
	Medicaid with Limited Benefits	-0.0008
	Premium Assistance – Like	0.0000***
	Premium Assistance	0.0108*
Notes: N=609; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ Multinomial logit models including year fixed effects; robust standard errors clustered at the state level		

Table B8. Effect of State Resident Ideology on Parents' Medicaid Eligibility Levels, One Year Lead Dependent Variable

Variable	Eligibility Level % FPL	
	Full Sample	**Limited Sample**
State Resident Ideology (% Liberal)	1.50	3.14*
Party Control of State Government (Democratic)	41.05*	37.36*
Party Control of State Government (Divided)	15.88	12.45
Ideology, Senate Democrats	0.10	0.13
Ideology, Senate Republicans	0.21	-0.08
Ideology, House Democrats	-0.48	-0.79
Ideology, House Republicans	-0.01	-0.33
Race (% White)	-1.46	-4.16
Ethnicity (% Hispanic)	-0.51	-0.04
Sex (% Female)	-1.61	-0.97
Age (% Adults)	1.65	4.61
Education (% HS or More)	-2.23	-3.97
Marital Status (% Single Female Families)	-1.01	-0.95
Metropolitan Status (% Metropolitan)	2.38*	2.34
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.92	-1.32*
Unemployment (% Unemployed)	0.75	0.94
Poverty (% Below 100%FPL)	-0.91	-1.92
FMAP	1.62	2.38
Population (1000s)	0.00	0.00
Medicare Wage Index	15.40	19.30
Medicaid Expenditures (Lagged % of Total Expenditures)	1.13	1.62
Total Taxable Resources (per capita, $1000s)	-0.51	-0.52
Neighboring States' Mean Eligibility (%FPL)	-0.10	-0.09

Note: Full Sample N=609; Limited Sample N=505;
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
OLS models including state and year fixed effects; robust standard errors clustered at the state level

Table B9. Effect of State Resident Ideology on Parents' Medicaid Eligibility, One Year Lead Dependent Variable and One Year Lead Party Control

Variable	Eligibility Level % FPL	
	Full Sample	**Limited Sample**
State Resident Ideology (% Liberal)	1.68	3.53*
Party Control of State Government (Democratic)	38.77*	34.49*
Party Control of State Government (Divided)	11.26	6.79
Ideology, Senate Democrats	0.17	0.21
Ideology, Senate Republicans	0.19	-0.17
Ideology, House Democrats	-0.42	-0.71
Ideology, House Republicans	0.14	-0.25
Race (% White)	-1.80	-4.21
Ethnicity (% Hispanic)	-0.40	0.15
Sex (% Female)	-1.44	-0.98
Age (% Adults)	-0.06	2.80
Education (% HS or More)	-0.84	-2.29
Marital Status (% Single Female Families)	-1.05	-0.90
Metropolitan Status (% Metropolitan)	2.25	2.11
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.94	-1.31*
Unemployment (% Unemployed)	0.60	0.78
Poverty (% Below 100%FPL)	-1.13	-2.12
FMAP	1.43	2.05
Population (1000s)	0.00	0.00
Medicare Wage Index	11.45	14.26
Medicaid Expenditures (Lagged % of Total Expenditures)	1.45	1.99
Total Taxable Resources (per capita, $1000s)	-0.43	-0.55
Neighboring States' Mean Eligibility (%FPL)	-0.07	-0.06

Note: Full Sample N=582; Limited Sample N=482;
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
OLS models including state and year fixed effects; robust standard errors clustered at the state level

Table B10. Effect of Liberal State Resident Ideology on the Likelihood of Eligibility Expansion and Likelihood of Eligibility Levels At or Above 100% FPL for Parents in Medicaid 1997-2010, One Year Lagged Independent Variable

Variable	Marginal Effect Eligibility Expansion		Eligibility ≥ 100% FPL
	Full Sample	Limited Sample	
State Resident Ideology (% Liberal)	0.0117	0.0262**	0.0277**
Democratic Party Control of State Government	0.2065**	0.1635*	0.0551
Divided Party Control of State Government	0.1861**	0.1956**	0.1314
Ideology, Senate Democrats	-0.0005	-0.0028	-0.0014
Ideology, Senate Republicans	0.0003	0.0004	0.0038
Ideology, House Democrats	0.0004	0.0027	0.0033
Ideology, House Republicans	0.0027	0.0008	-0.0029
Race (% White)	0.0062	0.0038	-0.0019
Ethnicity (% Hispanic)	0.0091	0.0052	0.0002
Sex (% Female)	0.0116	-0.0155	-0.0020
Age (% Adults)	-0.0343	-0.0331	-0.0011
Education (% HS or More)	-0.0014	0.0079	-0.0037
Marital Status (% Single Female Families)	-0.0018	-0.0045	0.0016
Metropolitan Status (% Metropolitan)	0.0017	0.0042	0.0060*
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.0039	-0.0061	-0.0159***
Unemployment (% Unemployed)	-0.0396*	-0.0398	0.0096
Poverty (% Below 100%FPL)	-0.0262	-0.0208	-0.0296
FMAP	0.0042	0.0047	0.0203
Population (1000s)	0.0000	0.0000	0.0000
Medicare Wage Index	0.4069	0.6308*	0.7963
Medicaid Expenditures (Lagged % of Total Expenditures)	0.0119*	0.0113*	-0.0008
Total Taxable Resources (per capita, $1000s)	-0.0127**	-0.0162**	-0.0047
Neighboring States' Mean Eligibility (%FPL)	0.0013	0.0017*	-0.0001

Note: Full Sample N=565; Limited Sample N=469; Over 100% FPL Sample N=565
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
Logit models including year fixed effects; robust standard errors clustered at the state level

Table B11. Effect of State Resident Ideology on Parents' Medicaid Eligibility Levels, One Year Lagged Independent Variable

Variable	Eligibility Level % FPL	
	Full Sample	**Limited Sample**
State Resident Ideology (% Liberal)	1.76	2.98*
Party Control of State Government (Democratic)	43.51*	41.26*
Party Control of State Government (Divided)	13.42	10.46
Ideology, Senate Democrats	0.02	0.02
Ideology, Senate Republicans	0.31	0.25
Ideology, House Democrats	-0.04	-0.23
Ideology, House Republicans	-0.36	-0.71
Race (% White)	-1.23	-3.65
Ethnicity (% Hispanic)	0.25	0.58
Sex (% Female)	-0.91	-0.27
Age (% Adults)	1.94	4.05
Education (% HS or More)	-4.62	-6.54*
Marital Status (% Single Female Families)	-1.16	-0.61
Metropolitan Status (% Metropolitan)	2.12*	1.97
Uninsurance (Lagged % Uninsured of those in Poverty)	-0.79*	-1.14**
Unemployment (% Unemployed)	-2.23	-2.36
Poverty (% Below 100%FPL)	1.23	0.37
FMAP	1.31	1.92
Population (1000s)	-0.01	-0.01
Medicare Wage Index	-45.76	-44.24
Medicaid Expenditures (Lagged % of Total Expenditures)	0.55	1.00
Total Taxable Resources (per capita, $1000s)	-1.24	-1.64
Neighboring States' Mean Eligibility (%FPL)	-0.17	-0.17

Note: Full Sample N=565; Limited Sample N=469; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
OLS models including state and year fixed effects; robust standard errors clustered at the state level

Table B12. Effect of State Resident Ideology on Type of Public Health Insurance Expansion for Parents, One Year Lagged Independent Variable

Type Classification	**Expansion Type**	**Marginal Effect**
Program Type	No Expansion	-0.0223*
	Medicaid	0.0114
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0108**
Premium Requirements	No Expansion	-0.0236*
	Medicaid with No Premium	0.0191*
	Medicaid with a Premium	-0.0103
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0149**
Benefit Level	No Expansion	-0.0223*
	Medicaid with Full Benefits	0.0137
	Medicaid with Limited Benefits	-0.0248
	Premium Assistance – Like	0.0000**
	Premium Assistance	0.0111**
Notes: N=565; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ Multinomial logit models including year fixed effects; robust standard errors clustered at the state level		

Appendix C: Chapter 3 Sensitivity Analysis

Table C1. Full Results: Marginal Effect of Contraceptive Coverage Mandates on the Likelihood of Unintended, Mistimed, and Unwanted Births Among Privately Insured Women

	Unintended Birth	**Mistimed Birth**	**Unwanted Birth**
Contraceptive Coverage Mandate	-0.0199*	-0.0218**	-0.0038
Age			
18-19	-0.0973***	-0.0921***	-0.1792***
20-24	-0.3595***	-0.3680***	-0.3409***
25-29	-0.5451***	-0.5588***	-0.3843***
30-34	-0.6062***	-0.6291***	-0.3827***
35-39	-0.6291***	-0.6824***	-0.3572***
40+	-0.6314***	-0.7510***	-0.3145***
Education			
Some HS	0.0171	0.0001	0.0076
HS Graduate	0.0293	0.0079	0.0194*
Some College	0.0354*	0.0216	0.0108
College Graduate	-0.0125	-0.0078	-0.0263***
Race			
Black	0.2217***	0.1819***	0.14661***
Other	0.0712***	0.0629***	0.03148***
Hispanic Ethnicity	0.0567***	0.0549***	0.0135
Prior Births			
1	0.0268***	0.0180***	0.0233***
2	0.1789***	0.1029***	0.1620***
3-5	0.2524***	0.1496***	0.2234***
6+	0.3041***	0.2667***	0.1785***
Prior Terminations			
1	-0.0380***	-0.0337***	-0.0155***
2	-0.0393***	-0.0377***	-0.0106**
3	-0.0265	-0.0223	-0.0095
4	0.0102	0.0169	-0.002
5+	-0.0462*	-0.0366*	-0.0222**
Urban	0.0093***	0.0147***	-0.0045
Smoked 3 Months Before Pregnancy	0.0967***	0.0727***	0.0513***
Drank 3 Months Before Pregnancy	0.0798***	0.0743***	0.0260***
% Self-Insured ESI	-0.0282	-0.0092	-0.0568**
N	116,772	107,431	86,260
Notes: * p < 0.05 ** p < 0.01 *** p < 0.001 Models include state and year fixed effects robust standard errors clustered at the state level, and survey weights			

Table C2. Full Results: Marginal Effect of Contraceptive Coverage Mandates on the Likelihood of Pregnancy Prevention Efforts and Barriers Among Privately Insured Women

	Pregnancy Prevention Efforts Pre-Conception	**Problems Getting Birth Control Pre-Conception**	**Pregnancy Prevention Efforts Post-Partum**	**Can't Pay for Birth Control Post-Partum**
Contraceptive Coverage Mandate	-0.0123	-0.0169*	-0.0109**	-0.0097
Age				
18-19	-0.0387*	-0.0505*	-0.0392***	0.0198
20-24	-0.1103***	-0.0982***	-0.0419***	-0.0006
25-29	-0.1694***	-0.1266***	-0.0482***	-0.0356
30-34	-0.2009***	-0.1402***	-0.0728***	-0.0479
35-39	-0.2163***	-0.1499***	-0.1037***	-0.0553*
40+	-0.2327***	-0.1565***	-0.1717***	-0.0535**
Education				
Some HS	-0.0028	0.0126	0.0258	-0.0092
HS Graduate	0.0374*	0.0208*	0.0514	-0.0074
Some College	0.1034***	0.0249	0.0705**	-0.0234
College Graduate	0.0850***	-0.0011	0.0768**	-0.0457*
Race				
Black	0.0427**	0.0265***	-0.0061	0.0098
Other	0.0193	-0.0018	-0.0473***	-0.0065
Hispanic Ethnicity	0.0481***	0.0253*	0.0388***	0.0092
Prior Births				
1	-0.0003	0.0206***	0.0310***	0.0050
2	0.1237***	0.0365***	0.0547***	0.0305***
3-5	0.1690***	0.0471***	0.0434***	0.0180
6+	0.0714	0.0324	-0.0866	-0.0030
Prior Terminations				
1		-0.0068	-0.0093***	0.0032
2	-0.0088	-0.0232***	-0.0289**	0.0104
3	-0.0419*	-0.0020	-0.0507***	0.0154
4	-0.0342	-0.0235	0.0069	-0.0124
5+	-0.0698**	0.0245	-0.0254**	0.0199
Urban	-0.0500	0.0090**	-0.0154***	-0.0032
Smoked 3 Months Before Pregnancy	0.0055	0.0172***	-0.0025	0.0022
Drank 3 Months Before Pregnancy	-0.0127***	0.0080	0.0264***	-0.0005
% Self-Insured ESI	0.0202	0.0123	0.0109	-0.0322
N	59,655	23,081	99,947	17,011

Notes: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
Models include state and year fixed effects robust standard errors clustered at the state level, and survey weights

Table C3. Full Results: Marginal Effect of Contraceptive Coverage Mandates on the Likelihood of Pregnancy Prevention Efforts Post-Partum Among Privately Insured Women

	Using IUD Post-Partum	**Using Pill Post-Partum**
Contraceptive Coverage Mandate	0.0329***	-0.163***
Age		
18-19	0.0136	0.067***
20-24	-0.0683	0.091***
25-29	-0.1068**	0.093***
30-34	-0.1223**	0.064***
35-39	-0.1413***	-0.017
40+	-0.1262**	-0.128***
Education		
Some HS	0.0221	0.027
HS Graduate	0.0554*	0.069*
Some College	0.0534*	0.089**
College Graduate	0.0406	0.086*
Race		
Black	0.0251*	-0.047***
Other	0.0013	-0.109***
Hispanic Ethnicity	0.0153	-0.041***
Prior Births		
1	0.0458***	-0.110***
2	0.0474***	-0.225***
3-5	0.0246**	-0.262***
6+	0.0365	-0.296***
Prior Terminations		
1	-0.0082	-0.001
2	0.0242**	-0.058***
3	0.0300	-0.039
4	-0.0650***	-0.008
5+	0.0128	-0.056
Urban	-0.0038	-0.009*
Smoked 3 Months Before Pregnancy	0.0114	-0.032***
Drank 3 Months Before Pregnancy	0.0109	0.039**
% Self-Insured ESI	0.1447	-0.145*
N	25,193	51,481

Notes: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
Models include state and year fixed effects robust standard errors clustered at the state level, and survey weights