The Effects of State Policy Design Features on Take-up and Crowd-out Rates for the State Children's Health Insurance Program

Cynthia Bansak
Steven Raphael

Abstract

We evaluate the effects of state policy design features on SCHIP take-up rates and on the degree to which SCHIP benefits crowd out private benefits. The results indicate overall program take-up rates of approximately 10 percent. However, there is considerable heterogeneity across states, suggesting a potential role of inter-state variation in policy design. We find that several design mechanisms have significant and substantial positive effects on take-up. For example, eliminating asset tests, offering continuous coverage, simplifying the application and renewal processes, and extending benefits to parents all have sizable and positive effects on take-up rates. Mandatory waiting periods, on the other hand, consistently reduce take-up rates. In all, inter-state differences in outreach and anti-crowd-out efforts explain roughly one-quarter of the cross-state variation in take-up rates. Concerning the crowding out of private health insurance benefits, we find that between one-quarter and one-third of the increase in public health insurance coverage for SCHIP-eligible children is offset by a decline in private health coverage. We find little evidence that the policy-induced variation in take-up is associated with a significant degree of crowd out, and no evidence that the negative effect on private coverage caused by state policy choices is any greater than the overall crowding-out effect. This suggests that states are not augmenting take-up rates by enrolling children that are relatively more likely to have private health insurance benefits. © *2006 by the Association for Public Policy Analysis and Management*

INTRODUCTION

In 1997, Congress created the State Children's Health Insurance Program (SCHIP) in an attempt to expand insurance coverage to children in low-income families. Unlike Medicaid, which provides health insurance benefits to poor households, SCHIP extends benefits to children in near-poor households, with some states extending coverage to children in families with income levels as high as 350 percent of the federal poverty level. SCHIP has dramatically increased the number of children eligible for and enrolled in public health insurance programs. Between 1997 and 2001, the proportion of children eligible for public health insurance increased from roughly one-third to one-half. Concurrently, SCHIP program enrollment increased from one million children in December 1998 to 5.3 million children in fiscal year 2002 (Centers for Medicare and Medicaid Services, 2003).

The ability of the SCHIP program to increase insurance coverage rates for children in near-poor families depends on a number of factors. First, states must enroll

Journal of Policy Analysis and Management, Vol. 26, No. 1, 149–175 (2006)

Published by Wiley Periodicals, Inc. Published online in Wiley InterScience (www.interscience.wiley.com)
DOI: 10.1002/pam.20231

previously ineligible children in a new public health insurance program. Encouraging take-up among near-poor families may be particularly difficult, as fewer such families collect other forms of public assistance and stigma effects are likely to be large. The fact that state-level spending on SCHIP benefits has been consistently below the allotment of SCHIP funds suggests that the rate at which eligible children take up program benefits is far below potential.[1] Moreover, to the extent that newly eligible children that take up SCHIP benefits substitute public health insurance for private coverage, the effect of the SCHIP expansion on overall coverage will be mitigated.

To facilitate take-up yet control the degree of private coverage crowd-out, states have experimented with a number of policy design features. For example, some states have simplified the application process, others have eliminated face-to-face eligibility interviews and asset tests, while others have extended coverage to the parents of eligible children. To limit crowd-out, many states require mandatory waiting periods of varying lengths following the loss of private health benefits.

In this project, we evaluate the effects of specific state policy design features on SCHIP take-up rates and on the degree to which SCHIP benefits crowd out private benefits. Using a characterization of state policy variation presented by the Kaiser Commission on Medicaid and the Uninsured (Cohen-Ross & Cox, 2002) and data from the 1998 and 2002 March Current Population Surveys, we assess the extent to which interstate differences in take-up and crowd-out are attributable to interstate variation in the functional implementation of SCHIP. Our principal estimates are based on the relative change in public and private sector coverage rates among SCHIP-eligible households between 1997 and 2001.

We find an overall program take-up rate of approximately 10 percent (similar to that reported in LoSasso & Buchmueller, 2004), with considerable heterogeneity across states. We also find that several design mechanisms have significant and substantial positive effects on take-up. For example, eliminating asset tests, offering continuous coverage, simplifying the application and renewal processes, and extending benefits to parents all have sizable and positive effects on take-up rates. Mandatory waiting periods, on the other hand, consistently reduce take-up rates. Our results suggest that a fair portion of the inter-state variation in SCHIP take-up rates is attributable to inter-state differences in policy implementation. Specifically, our model explains approximately 25 percent of the considerable variation across states in the change in public coverage rates among SCHIP-eligible children between 1997 and 2001.

We find little evidence that state policy choices that augment take-up lead to further crowd-out of private health coverage. We find no evidence suggesting that the degree of crowd-out caused by state policy design exceeds the overall level of crowd-out among SCHIP recipients. This suggests that states are not augmenting take-up rates by enrolling children that are relatively more likely to have private health insurance benefits.

THE SCHIP PROGRAM

As part of the Balanced Budget Act of 1997, Congress created the State Children's Health Insurance Program (SCHIP). The original legislation provided $40 billion in

[1] By 2002, eight states had used less than 25 percent of their available allotment, 21 states had used between 25 and 50 percent. Only two states (New Jersey and Rhode Island) had spent more than 75 percent (U.S. Committee on Ways and Means, 2004).

federal matching funds through fiscal year 2007 for state-designed and operated public health insurance programs. SCHIP targets children in low-income families with incomes too high to qualify for Medicaid benefits. Roughly speaking, children in families with income between 100 and 200 percent of the poverty line are eligible,[2] although the legislation grants states some flexibility in setting eligibility cutoffs.[3] States with Medicaid eligibility cutoffs at or above 200 percent of the poverty line were granted the option to increase the SCHIP income cutoff by an additional 50 percentage points. As a result, some states have extended coverage to children in families with income levels up to 350 percent of the poverty line. Unlike Medicaid, SCHIP benefits are not an entitlement. States are allotted funds based on a matching formula and each state is allowed to define a "targeted" group of low-income children.[4]

The introduction of SCHIP greatly expanded the proportion of children eligible for public health insurance. Table 1 presents the proportion of all children and uninsured children that are eligible for Medicaid and SCHIP benefits in 1997 and 2001. These figures are based on tabulations from the 1998 and 2002 March Current Population Survey.[5] In 1997, 34 percent of U.S. children were eligible for public health insurance through the Medicaid program. In 2001, this increases to 51

Table 1. Proportion of children 18 and under covered by health insurance by type and the proportion eligible for public health insurance, 1997 and 2001.

	1997	2001	Change
Coverage Rates			
Covered	0.847 (0.002)	0.880 (0.001)	0.033 (0.002)
Public	0.200 (0.002)	0.223 (0.001)	0.023 (0.002)
Private	0.668 (0.002)	0.682 (0.002)	0.015 (0.003)
Eligible Among All Children			
Medicaid-eligible	0.339 (0.002)	0.323 (0.002)	-0.016 (0.003)
SCHIP-eligible	0.000 (0.000)	0.190 (0.001)	0.190 (0.001)
Eligible Among Uninsured Children			
Medicaid-eligible	0.513 (0.006)	0.495 (0.006)	-0.019 (0.009)
SCHIP-eligible	0.000 (0.000)	0.250 (0.005)	0.250 (0.005)

Note: Standard errors are in parentheses. Figures for 1997 are calculated from the 1998 March CPS. Figures for 2001 are calculated from the 2002 March CPS.

[2] There are some groups of low-income children who are not eligible. For example, children eligible for Medicaid, children who are members of families currently eligible for state employee insurance, and children who live in an Institution for Mental Diseases are ineligible to receive coverage under SCHIP (CMS, 2004).

[3] For example, states can use geography, age, income and resources, residency, disability status, access to other health insurance, and duration of SCHIP enrollment in determining eligibility (U.S. Committee on Ways and Means, 2004).

[4] Each state has a fixed allotment of SCHIP funds that are distributed as a federal match with an enhanced matching rate, ranging from 65% to 85% (U.S. Committee on Ways and Means, 2004). State allotments are determined through a formula that takes into account both the "number of children" and a "state cost factor" that reflects the cost of health care in a given state. The number of children is based on 50% of the low-income uninsured children in the state plus 50% of the number of low-income children in the state. The state cost factor is based on annual health service industry wages in the state compared to the national average. For most states, allotments available for a fiscal year can be used over the next 3 years; however, funds still available after such time may be redistributed among those states that fully expend their allotments (CMS, 2004).

[5] The data and our definitions of eligibility are discussed in greater detail below.

percent, with 19 percent eligible for SCHIP benefits and 32 percent eligible for Medicaid. Restricting the focus to uninsured children, roughly half are eligible for Medicaid benefits while one-quarter are eligible for SCHIP benefits. These figures suggest that much of the problem of uninsured children in the U.S. could be addressed via existing programs, with SCHIP filling a substantial gap.

Figure 1 depicts the effect of the introduction of SCHIP on the proportion of children eligible for benefits by family income relative to the poverty line in 2001.[6] The figure presents the proportion of children in each group eligible for public health insurance under the 1997 Medicaid criteria and under the combination of the 1997 and 2001 Medicaid and SCHIP eligibility criteria.[7] In the absence of SCHIP, nearly all children living below the poverty line would be eligible for Medicaid benefits. As income increases, the proportion eligible for Medicaid declines precipitously. With SCHIP, nearly all children with income-to-poverty ratios less than 1.5 are eligible for public health insurance. Roughly 90 percent of children in families with income between 150 and 200 percent of the poverty line are eligible. Beyond 200 percent of the poverty line, however, eligibility rates drop off quickly.

Under the 1997 legislation, states were required to implement the SCHIP program in one of three manners: (1) by expanding the state Medicaid program to children who previously did not qualify for the program [Medicaid Expansion (ME)],

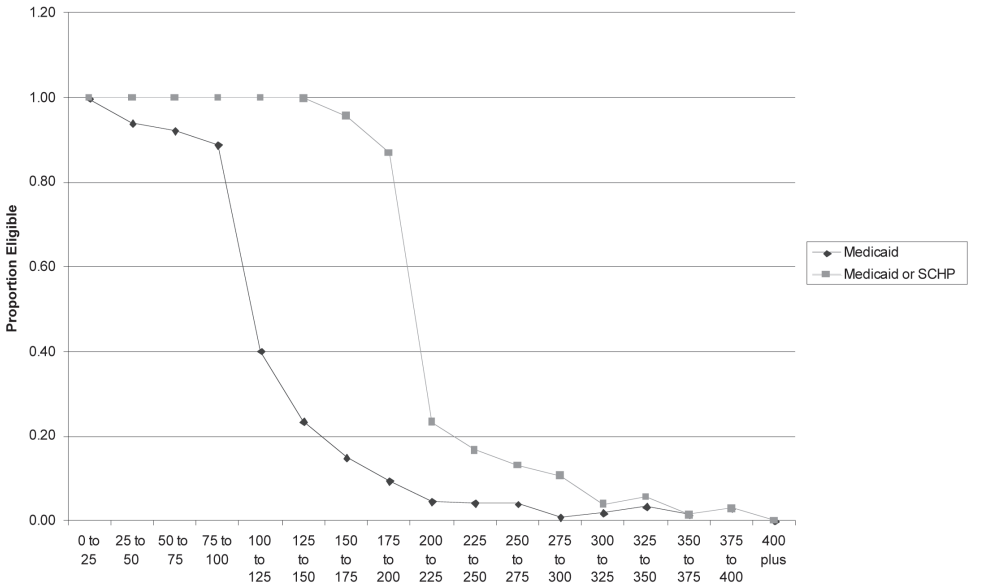

Figure 1. Proportion of Children 18 and Under Eligible for Public Health Insurance Benefits Under the Medicaid and SCHIP Programs by Income Relative to the Poverty Line, 2001.

[6] In Figure 1, children are put into 17 income groups; an income group is defined by family income relative to the Federal Poverty Level and each group represents a range of 25 percentage points.
[7] The figure is based on tabulations from the 2002 March Current Population Survey.

(2) by creating a stand-alone, state-designed program [SCHIP separate program (SP)], or (3) by implementing a combination of the two by initially expanding Medicaid programs and then adding a state-designed portion [Combination (Combo)]. As of September 30, 1999, all states and territories had a SCHIP plan approved and in place (CMS, 2004). By December 2003, 13 states plus the District of Columbia (and several U.S. territories) expanded Medicaid, 18 states had created separate state-designed programs, and 19 states had a combination program in place (CMS, 2004).

SCHIP TAKE-UP AND THE CROWDING OUT OF PRIVATE HEALTH INSURANCE COVERAGE

The net effect of the introduction of the SCHIP program on insurance coverage rates depends on both the extent to which eligible children take up benefits and the extent to which public coverage crowds out private coverage. In previous expansions of public health programs in the United States, take-up rates vary considerably but are typically low for targeted uninsured low-income children (Currie, 2003). Following the Medicaid expansions of the late 1980s and early 1990s, a number of studies examined the ensuing take-up by children of public health insurance (Card & Shore-Sheppard, 2001; Cutler & Gruber, 1996; Dubay & Kenney, 1996; Ham & Shore-Sheppard, 2003; Shore-Sheppard, 2000; Yacizi & Kaestner, 2000). Depending on the data and the time period studied, take-up rate estimates indicate that between one-tenth and one-third of children newly eligible for Medicaid enroll in the program and receive benefits. For example, Cutler and Gruber (1996) conclude that of newly eligible children, 23 percent take up coverage. In a study of the effects of OBRA 1989 and OBRA 1990, Card and Shore-Sheppard (2001) found a 10 to 15 percentage point rise in Medicaid coverage among poor children born after September 30, 1983, when all of these children were made eligible. Studies have also found that take-up declines when eligibility extends to higher-income families (Card & Shore-Sheppard, 2001; Cutler & Gruber, 1996).

The existing research on SCHIP finds take-up rates that are fairly low. For example, LoSasso and Buchmueller (2004) find SCHIP take-up rates on the order of 10 percent. This low take-up is likely a function of several factors. Newly eligible children and their families are likely to be unaware of the change in their eligibility status, especially if such households do not receive other public benefits, such as food stamps or income assistance. In addition, transaction costs and/or the possible stigma associated with public programs may further inhibit take-up.[8]

In light of the low take-up rates associated with previous Medicaid expansions, many states included a number of specific outreach policies designed to facilitate enrollment in their designated SCHIP program. For example, to encourage take-up, many states grant presumptive eligibility to applicants, some have simplified the application process by reducing paperwork and eliminating face-to-face interviews, many states have implemented bilingual outreach efforts, and some have even extended benefits to the parents of eligible children (Rosenbach et al., 2001).

[8] Currie (2003) posits that the stigma associated with receiving public benefits may be larger when recipients are forced to divulge personal information on applications. Stuber and Kronebusch (2004) find corroborating evidence suggesting stigma and perceived transaction costs are important determinants of low take-up for the Temporary Assistance to Needy Families program and Medicaid. Indeed, Cunningham (2001) finds evidence that low take-up rates for SCHIP in high uninsurance areas are likely due to non-economic factors such as stigma, lower preferences for health coverage, language barriers, lack of awareness, and lack of understanding of the importance of access to health care.

In addition to concerns over low take-up rates, policy makers and individual states were also concerned that currently insured persons made eligible for SCHIP would drop their private coverage and take advantage of the expanded public health insurance for their children. Most states have attempted to limit crowd-out by implementing a combination of deterrents. For example, several state plans include waiting periods for moving from private to public insurance. Others have implemented sliding-scale premium contributions for higher income families among the eligibles. Although less frequent, other states assist or subsidize employer supplied insurance premiums in an attempt to limit crowd-out.[9]

Concurrent with the cross-state policy variation, there is considerable variation across states in observable take-up and crowd-out rates. Figure 2 presents a scatter plot of the 1997 to 2001 change in the proportion of SCHIP-eligible children covered by private health insurance against the comparable change in the proportion of eligible children covered by public health insurance, where each observation corresponds to an individual state. Each data point is weighted by the number of observations from the 1998 March Current Population Survey. There are large cross-state differences in the proportion of eligible children that take up benefits, ranging from slight declines to increases on the order of 0.3. Similarly, changes in the proportion covered by private insurance vary considerably across states. The scatter plot reveals a negative relationship between the changes in private and public coverage. A weighted regression suggests that each percentage point change in public health coverage causes a 0.25 percentage point decrease in private coverage.[10] However, the figure suggests that there is considerable heterogeneity in crowd-out across states.[11]

There is limited research concerning the effects of policy design features on public program participation rates. Currie and Grogger (2001) assess whether program design features such as the interval between mandatory recertifications and the introduction of electronic benefits transfer systems impact program take-up for the federal food stamps program and find some evidence that shorter recertification intervals reduce program participation. Kopczuk and Pop-Eleches (2005) find the introduction of state electronic filing programs significantly increased participation in the EITC. In studies of Medicaid enrollment of children in California, Aizer (2003a, 2003b) finds that access to bilingual application assistance increases new monthly Medicaid enrollment among Hispanics and Asian children and a week of Spanish-language advertisements increases new enrollment among Hispanic children; meanwhile, an additional week of English-language advertising appears to have no effect. Kronebusch and Elbel (2004) test for the effects of program design features and the effects of welfare reform on SCHIP enrollment and find some evidence of negative effects of asset tests and waiting periods and positive effects of simplifying the enrollment process on participation. However, this latter study is

[9] Shore-Sheppard, Buchmueller, and Jensen (2000) examine the mechanism by which crowding out occurs for small firms. They find no evidence of employers changing insurance offerings to workers following the expansions. However, they find a negative relationship between Medicaid eligibility of a firm's employees and the take-up rate for health insurance offered by the firm.

[10] In empirical studies of crowd-out, researchers typically estimate the share of enrollment in expanded or newly introduced public program that can be attributed to a reduction in private coverage. Estimate of crowd-out for Medicaid expansions range considerably, from finding no crowd-out (Hamm & Shore-Sheppard, 2003) to approximately 50 percent crowd-out (Cutler & Gruber, 1996). See Davidson, Blewett, & Thiede (2004) for a thorough review of the empirical evidence on crowd-out.

[11] Those observations lying above the regression line exhibit declines in private coverage for a given increase in public coverage that is less than expected, while the latter is true for states lying below the regression line.

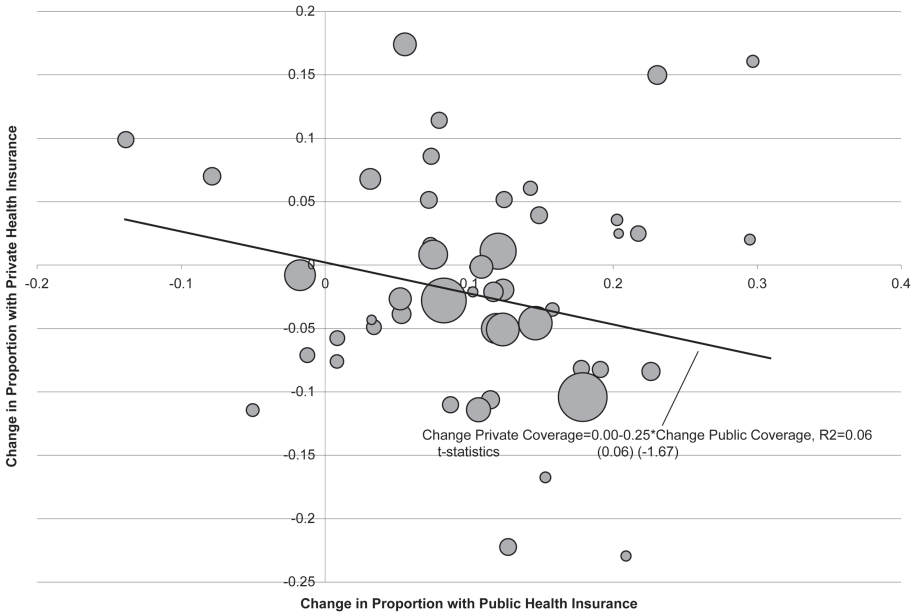

Figure 2. Scatter Plot of the 1997 to 2001 State-Level Change in Private Health Insurance Coverage Among SCHIP-Eligible Children Against the Comparable Change in Public Health Insurance Coverage.

based on a single cross-section of data and thus it is difficult to disentangle true design features from idiosyncratic differences in enrollment across states.

Wolfe and Scrivner (2005) analyze a question similar to the one addressed in this paper; namely, how do SCHIP program characteristics impact public coverage take-up rates. Using Current Population Survey data for 2000 and 2001, the authors explore the effects of design features on overall health insurance coverage and public health insurance coverage among children in households with incomes less than 300 percent of the poverty line. The authors also present some separate results restricting the sample to children that are imputed to be eligible for SCHIP benefits. The study finds negative effects on public coverage of waiting periods and insurance premiums and positive effects of eliminating asset tests, eliminating face-to-face interviews, and extending benefits to parents.

In what follows, we build on this research by expanding the set of program features analyzed, by employing a methodological design that relies on the longitudinal changes in public and private coverage rates rather than cross-sectional variation, and that focuses explicitly on those children eligible for SCHIP benefits. In addition, we assess whether policy design-induced take-up is more likely to generate private sector crowd-out, a question that has not been explored in previous work.

DATA DESCRIPTION AND METHODOLOGICAL APPROACH

To estimate the effects of state policy variation on take-up and crowd-out, we pursue the following estimation strategy. We first identify children eligible for SCHIP

benefits in 2001 as well as children that would have been eligible in 1997 (under 2001 income criteria), had the program been in existence. Our principal measure of take-up is the change in public coverage among SCHIP-eligible children between 1997 and 2001. Our crowd-out measure is based on the corresponding change in private coverage rates. To assess the effects of specific design features, we test for interaction effects between the principal time effect in our take-up and crowd-out models and the employment of various implementation features. Thus, the impact of, say, extending benefits to parents is estimated by comparing the change in take-up rates among states that extend such benefits to those that do not. In this section, we describe in detail our data and methods for identifying SCHIP-eligible children. We then discuss our estimation methodology as well as our characterization of inter-state policy variation in the implementation of SCHIP.

Data Description and Identifying Eligible Children

We draw samples of children from the 1998 and 2002 Current Population Survey (CPS) Annual Social and Economic Supplement. Income and health insurance coverage questions in the March CPS refer to the prior calendar year. Thus, the 2002 data pertain to coverage and eligibility for the year 2001, while the 1998 data pertain to 1997.[12] Identifying children in the CPS that are eligible for public health insurance benefits requires two sources of information: (1) information on family income net of allowable disregards, and (2) state-level information on Medicaid and SCHIP eligibility criteria.

To gauge income, we construct a family income variable from the person level records of the CPS applying the Medicaid definition of families.[13] The Medicaid income eligibility calculation disregards income from child support payments, work-related expenses, and child-care costs. As of 2001, the maximum monthly deductions were $90 per worker for work costs and between $175 and $200 per child ($200 for children under 3 years old and $175 per child 3 years and older) for child care costs. In calculating annual family income, we deduct $2,100 (or $175 per month) for each child under 12 years of age for annual child care expenses and $1,080 (or $90/month) for work-related expenditures. Finally, we divide the constructed family income variable by the family-size specific federal poverty line for either 1997 or 2001. This measure of net income relative to the poverty line is used to impute Medicaid as well as SCHIP eligibility.

To gauge program eligibility, we use income eligibility criteria culled from Shore-Sheppard (2003a, 2003b) and the U.S. Committee on Ways and Means (2004).[14] For 1997, we identify children that are eligible for Medicaid as those children who, given their state, age, and family income relative to the poverty line, meet these eligibility criteria. We identify children in 1997 that are hypothetically eligible for

[12] Several studies (Berger, Black, & Scott, 1998; Swartz, 1986) have found that respondents often appear to be answering the question at a point-in-time rather during the previous year (as the question is posed). However, for the purposes of this study, we treat the insurance variables as pertaining to the prior year.
[13] The federal definition of a family for the purpose of assessing Medicaid eligibility includes the child (applicant), the child's siblings, and the child's legally responsible relatives living in the household (as opposed to all relatives or individuals living in the household). Thus, for the family of each child, we cumulate person-level income for all children, for the child's identified parent, and when identified, for the identified parent's spouse. Countable income under Medicaid includes income from the child's legally responsible relatives living in the household, as well as any income from other members of the household that is given to the family.
[14] These income eligibility criteria are presented in Appendix Table A of the online version of this article.

SCHIP benefits by identifying children who meet the listed SCHIP income criteria but did not meet the Medicaid criteria. Note, since SCHIP did not exist in 1997, this second group of children essentially identifies the SCHIP target group prior to the program's implementation. For 2001, we identify Medicaid-eligible children as those that meet the 1997 income criteria, while we define SCHIP-eligible children as those who meet the SCHIP criteria but not the income tests for Medicaid. Note that this schema attributes all expansions in coverage between 1997 and 2001 to the introduction of SCHIP.[15] The lion's share of our analysis below focuses on the SCHIP-eligible population of children, although we present some comparative patterns for Medicaid-eligible population and children who are ineligible for public health insurance benefits.

We characterize insurance coverage using the retrospective coverage items from the CPS. Since these questions refer to the past calendar year, a respondent may report coverage from several sources. Children that receive either Medicaid or SCHIP benefits are defined as being covered by public health insurance. We define private coverage as having private insurance either provided by an employer or purchased individually. Total coverage consists of public coverage, private coverage, plus a few other categories such as being covered by Medicare, CHAMPUS (military health insurance), or other government health insurance.

Table 1 presents sample averages by year for overall coverage, public and private coverage, and the proportion eligible for public coverage by program. Over this time period there are slight increases in coverage of all types. The table also shows that while 34 percent of children were eligible for public health insurance in 1997[16] under Medicaid, slightly over half of children are eligible for either Medicaid or SCHIP benefits in 2001. These eligibility figures correspond quite closely with the estimates of Dubay, Haley, and Kenney (2002), who use an alternative imputation procedure.

Table 2 presents average personal, family, and parent characteristics for children by their eligibility status for public health insurance and by whether they take up benefits. The figures are limited to children from the 2002 CPS. Relative to the Medicaid-eligible population, children eligible for SCHIP are slightly more likely to have health insurance coverage (84 vs. 82 percent), while both eligible populations are considerably less likely to be covered than ineligible children (94 percent covered). SCHIP children have higher rates of private insurance than Medicaid-eligible children (66 vs. 40 percent) and are considerably less likely to take up public insurance benefits (22 vs. 46 percent). A small fraction of children who we impute as ineligible for public insurance actually receive benefits (roughly 6 percent).

With respect to other characteristics listed in Table 2, SCHIP children are somewhat older than the Medicaid-eligible children (10.2 years old versus 7.2 years old), have higher incomes, are less likely to be minority, and reside in smaller families. In addition, the parents of SCHIP children are somewhat older and considerably more likely to be married. Within populations defined by eligibility status, those who take up benefits have lower incomes, are somewhat younger, and are considerably less likely to reside in a family where the parents are married. Take-up also differs by type of public program. While 46 percent of Medicaid-eligible children

[15] Note, several states provide SCHIP benefits through an expansion of their existing Medicaid programs, and thus Medicaid eligibility criteria are currently more generous in many states relative to the eligibility criteria for 1997.

[16] This is similar to the estimates in Shore-Sheppard (2000, 1997).

Table 2. Descriptive statistics for children and parent characteristics by eligibility status for Medicaid and SCHIP during 2001 and by whether the child received Medicaid or SCHIP benefits.

	Medicaid-Eligible			SCHIP-Eligible			Not Eligible for Either SCHIP or Medicaid		
	Total	No Public Coverage	Public Coverage	Total	No Public Coverage	Public Coverage	Total	No Public Coverage	Public Coverage
Child Characteristics									
Covered	0.816	0.659	1.000	0.842	0.799	1.000	0.937	0.932	1.00
Public	0.463	0.000	1.000	0.216	0.000	1.000	0.068	0.000	1.00
Private	0.396	0.626	0.129	0.657	0.773	0.239	0.883	0.918	0.404
Age	7.688	8.123	7.185	10.434	10.496	10.209	9.560	9.606	8.938
Black	0.243	0.190	0.305	0.171	0.161	0.209	0.103	0.095	0.205
Income/poverty	0.487	0.627	0.324	1.554	1.588	1.429	5.186	5.275	3.965
# of kids	3.541	3.530	3.562	3.185	3.221	3.053	2.535	2.534	2.562
Family size	4.535	4.594	4.465	4.620	4.691	4.367	4.145	4.167	3.841
Parent Characteristics									
Age	36.943	38.781	34.855	40.709	41.055	39.432	42.489	42.578	41.143
Immigrant	0.212	0.212	0.213	0.203	0.187	0.259	0.114	0.112	0.144
Married	0.433	0.506	0.348	0.651	0.667	0.593	0.789	0.800	0.644

Note: Tabulations are based on data from the March 2002 CPS.

Journal of Policy Analysis and Management DOI: 10.1002/pam
Published on behalf of the Association for Public Policy Analysis and Management

are covered by public health insurance, only 22 percent of SCHIP-eligible children are covered by public insurance in 2001.

Estimating Take-Up and Crowd-Out and Assessing the Policy Effects

We estimate the effects of state-level policy features on the take-up of SCHIP benefits and the degree of crowd-out by slightly augmenting a standard approach to estimating take-up rates. A typical methodological approach to estimating program take-up following a program expansion involves calculating the pre-post change in the proportion of the eligible population receiving benefits. For example, one could assess the overall take-up rate for the SCHIP expansion by estimating the pooled equation

$$Public_i = \alpha_0 + \alpha_1 Y2001_i + \gamma' X_i + \varepsilon_i \quad (1)$$

where $i = (1,..,N)$ indexes observations in the data set, $Public_i$ is a dummy variable equal to 1 if child i has publicly provided health insurance, $Y2001_i$ is a dummy variable indicating an observation for the year 2001 (from the 2002 CPS), X_i is a vector of control variables, α_0, α_1, and γ are parameters to be estimated, and ε_i is a normally distributed error term. One would estimate the regression using pooled data from the 1998 and 2002 CPS restricting the sample to those children that meet the 2001 eligibility criteria for SCHIP. Given the introduction of SCHIP between 1997 and 2001, variation in the year dummy variable captures variation in program eligibility among otherwise similar children. Thus, the estimate of the coefficient α_1 provides the difference in public coverage rates between SCHIP-eligible children in 1997 and 2001 after adjusting for observable differences, providing a fairly straightforward estimate of the program take-up rate.

Measuring crowd-out requires estimating the additional regression equation

$$Private_i = \beta_0 + \beta_1 Y2001_i + \delta' X_i + \varepsilon_i \quad (2)$$

where $Private_i$ is a dummy variable equal to 1 if child i has private health insurance and all other variables are as defined above. The coefficient β_1 gauges the difference in average private coverage rates between 1997 and 2001 after adjusting for observable characteristics. The rate of crowd-out equals the absolute value of the decline in private health insurance coverage divided by the program take-up rate. Thus, calculating crowd-out from regression Equations (1) and (2) requires simply dividing the absolute value of β_1 from Equation (2) by α_1 from Equation (1).[17]

To incorporate variation in policy implementation, we augment Equations (1) and (2) to permit take-up and crowd-out rates that vary with state policy efforts. Specifically, let $Policy_i$ be a J $\times$ 1 vector of dummy variables, where each dummy variable indicates whether the state of residence of child i uses the outreach or anti-crowd-out policy in implementing their SCHIP program, and $Policy_i^j$ be an element in this vector. We estimate the differential effect of each policy variable with the equation:

[17] To address the possible endogeneity of eligibility, we also computed instrumental variable estimates of the effect of the SCHIP expansions on the change in the proportion of children with health insurance in state-income group cells. The change in the proportion eligible for SCHIP is instrumented with the hypothetical proportion of children who would have been eligible in 1997 for SCHIP under the 2001 eligibility criteria. Our IV results are qualitatively similar to those without IVs presented in this paper and are available from the authors upon request.

$$Public_i = \alpha_0 + \alpha_1 Y2001_i + \kappa' Policy_i + \sum_{j=1}^{J} \theta_j * Policy_i^j * Y2001_i + \gamma' X_i + \varepsilon_i \quad (3)$$

where the principal differences between Equations (3) and (1) are the additions of the vector of policy dummy variables and a complete set of interaction terms between the policy dummy variables and the Y2001 dummy variable. The base policy effects, captured by the vector of coefficients κ, net out inter-state variation in public coverage that may be correlated with the adoption of a specific outreach or anti-crowd-out policy. The coefficients on the interaction terms, $\theta_1,..,\theta_J$, measure the extent to which public coverage increased by a differential amount in states that adopt policy j, holding constant all other policy efforts of the state. The coefficients on these interactions terms are our principal estimates of the effect of specific policies on take-up. Given that we have two years of data, we can also estimate Equation (3) inclusive of state fixed effects. Below, we present results with and without such controls.

To assess policy effects on crowd-out, we similarly augment Equation (2) to allow for state policy variation, or

$$Private_i = \beta_0 + \beta_1 Y2001_i + \lambda' Policy_i + \sum_{j=1}^{J} \psi_j * Policy_i^j * Y2001_i + \delta' X_i + \varepsilon_i \quad (4)$$

Here the base policy effects given by the vector of coefficients, λ, capture inter-state differences in private coverage rates correlated with the adoption of specific policies. The coefficients on the interaction terms, $\psi_1,...\psi_J$, gauge the extent to which the change in private coverage in states with policy effort j differ from the comparable change in states not making this effort, holding constant all other policies implemented by the state.

Figures 3 and 4 depict the number of states with each of the state policy design features that we analyze here.[18] Most of the design features presented in Figure 3 are directed toward simplifying the application and renewal processes and lowering the costs of applying for benefits. For example, eliminating face-to-face interviews for the initial and renewal applications; permitting the self-declaration of residency status, income, and of child's age; allowing for twelve-month continuous eligibility where income is not verified monthly; allowing for family applications and family renewal applications; and (in the event of a separate state SCHIP program) having a joint SCHIP/Medicaid application all facilitate applying for benefits at minimal personal costs. Thus, one would expect each of these features to increase program take-up rates.

Similarly, presumptive eligibility, whereby children meeting certain criteria are presumed eligible by health service providers and covered under the program while a formal application is processed, should also increase the number of households receiving benefits. The elimination of asset tests clearly expands eligibility and should increase coverage, while expanding public health benefits to parents, either through an expansion of Medicaid or the extension of the SCHIP program, should augment the number of families within the system.

Two of the design features in Figure 3 are commonly thought to impede SCHIP take-up. Specifically, in states with age-specific Medicaid criteria (that is to say, variation in Medicaid eligibility for children under 18), families may find that while their younger children are eligible for Medicaid benefits, their older children are eligible only for SCHIP. In such situations, application costs may be higher, and thus

[18] Appendix Table B in the online version of this article provides a complete state-by-state accounting for each of these features culled from Cohen-Ross and Cox (2002).

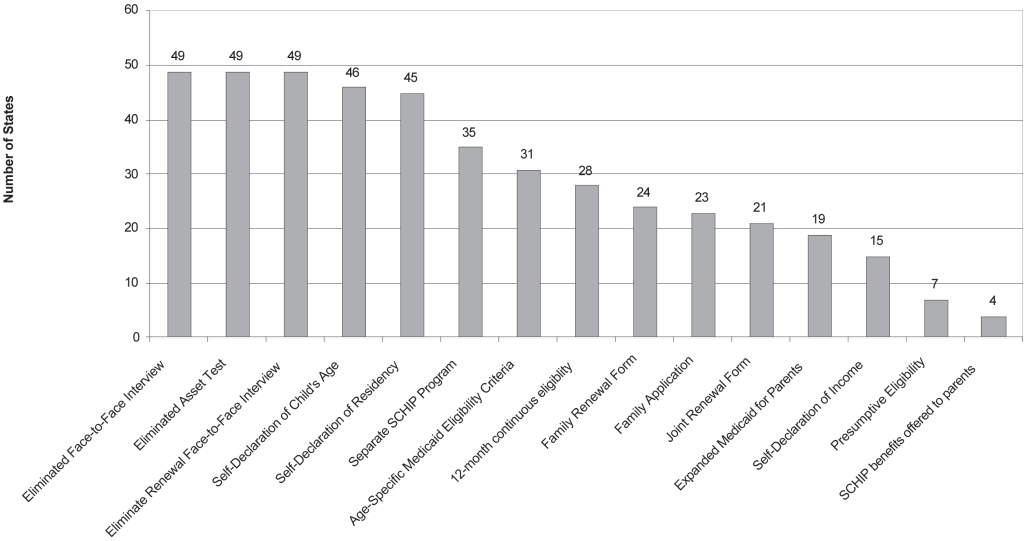

Figure 3. The Number of States Adopting Each Effort in Implementing the SCHIP Expansion.

SCHIP take-up lower. In addition, states with separate SCHIP programs that are not integrated into their Medicaid programs may have a more difficult time signing up potential beneficiaries, as the SCHIP program may be less able to benefit from Medicaid outreach and screening efforts. Thus, a priori, one might argue that these two features exert negative effects on take-up.

Figure 4 shows the distribution of states by the length of the mandatory waiting period required before an uninsured child becomes eligible for SCHIP benefits. The most common possibilities are no waiting period, a three-month waiting period, and a six-month waiting period. In the models estimated below, we group states into three categories: those with no waiting periods, those with a positive waiting period that is three months or less, and states with a waiting period that is at least four months. Of course, we anticipate that the waiting period variables will exert negative effects on take-up, all else held equal.

ESTIMATION RESULTS

In this section we present the main results of the paper. We begin by estimating the overall take-up rate for the expansion between 1997 and 2001 and compare these estimates to the findings from existing research. We then present our assessment of the effect of policy variation on inter-state differences in take-up rates and crowd-out.

Base Estimates

Table 3 displays the proportion of children with any health insurance coverage (panel A), with public health insurance coverage (panel B), and with private health insurance coverage (panel C) by year and by eligibility status. Each panel shows the proportion covered by year, the 1997 to 2001 change in coverage, and the regression-

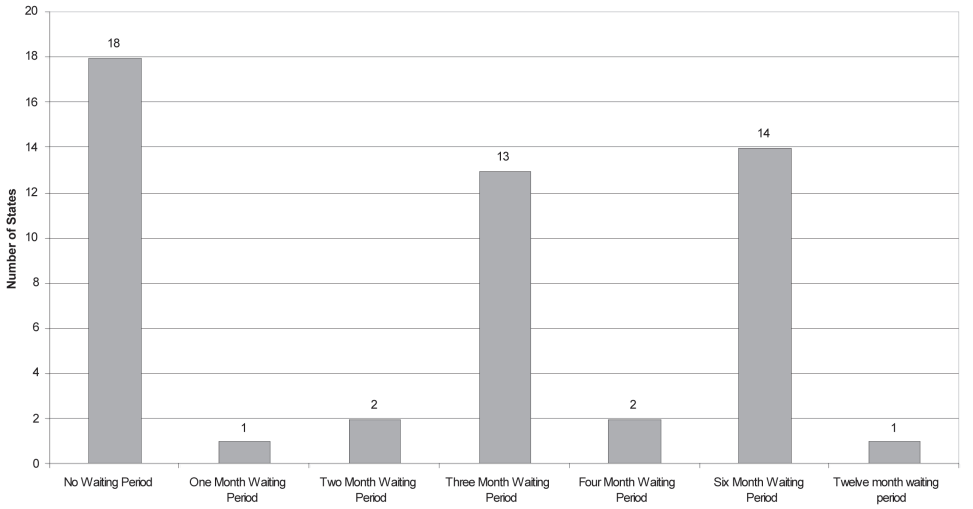

Figure 4. Number of States Adopting Specific Anti-Crowdout Provisions in Implementing the SCHIP Expansion.

adjusted change in coverage from two model specifications. The first specification controls for a third-order polynomial in age, a male dummy, and a full set of dummy variables indicating income relative to the poverty line in 25 percent increments. The second specification adds a full set of state dummy variables to the first specification. For the SCHIP-eligible population, the unadjusted change and the adjusted changes correspond to the coefficient on the year dummy in Equations 1 and 2.

Beginning with panel A, Medicaid-eligible and SCHIP-eligible children experience an increase in overall coverage of 5 and 6.2 percentage points, respectively. Ineligible children experience a smaller yet statistically significant increase in coverage of 1.2 percentage points. The differences in these changes (the last two rows of panel A) indicate that the relatively larger increases in coverage among SCHIP-eligible children are statistically significant at either the 5 or 1 percent level (both relative to ineligible and Medicaid-eligible children).

Panel B reveals much larger relative changes in the proportion of children covered by public health insurance. Public coverage increases by 10.5 percentage points among SCHIP-eligible children. Among the Medicaid-eligible, public coverage declines by 2.1 percentage points, while among the ineligible, public coverage declines by 1.2 percentage points.[19]

Panel C shows substantial differences in the change in private insurance coverage. Among the Medicaid-eligible, the private coverage increases by 6.6 percentage

[19] Roughly 11 percent of the children we identify as SCHIP-eligible received public health insurance benefits in 1997, even though the SCHIP programs did not exist. This problem in imputing eligibility is observed throughout the literature on take-up and crowd-out. For example, Cutler and Gruber (1996) find in the 1998 CPS that 21 percent of those made eligible for Medicaid between 1987 and 1992 reported public coverage in 1987, while 8 percent of those not eligible by 1992 did so. Similarly, LoSasso and Buchmueller (2004) find that 20 percent of children with public coverage are imputed to be ineligible for both Medicaid and SCHIP. Given the imperfect imputation, we believe that properly gauging take-up requires an empirical specification that focuses on the change in public coverage associated with either the expansion of an existing program or the creation of a new one.

Table 3. Proportion of children covered by types of coverage and by Medicaid and SCHIP eligibility status.

Eligibility Status	1997	2001	Unadjusted Change	Adjusted Change 1	Adjusted Change 2
Panel A: Has Health Insurance Coverage					
Medicaid	0.768 (0.004)	0.816 (0.003)	0.049 (0.004)	0.049 (0.004)	0.050 (0.004)
SCHIP	0.780 (0.005)	0.842 (0.003)	0.062 (0.005)	0.068 (0.005)	0.069 (0.005)
Ineligible	0.925 (0.002)	0.937 (0.001)	0.012 (0.002)	0.011 (0.002)	0.013 (0.002)
Δ SCHIP – ΔMedicaid	—	—	0.014 (0.007)	0.020 (0.007)	0.020 (0.007)
Δ SCHIP – ΔIneligible	—	—	0.050 (0.005)	0.057 (0.005)	0.057 (0.005)
Panel B: Has Publicly Provided Health Insurance Coverage					
Medicaid	0.483 (0.004)	0.462 (0.003)	–0.021 (0.005)	–0.009 (0.005)	–0.007 (0.005)
SCHIP	0.111 (0.003)	0.216 (0.004)	0.105 (0.005)	0.101 (0.005)	0.101 (0.005)
Ineligible	0.036 (0.001)	0.068 (0.001)	0.032 (0.002)	0.034 (0.002)	0.033 (0.002)
Δ SCHIP – ΔMedicaid	—	—	0.125 (0.008)	0.110 (0.008)	0.108 (0.008)
Δ SCHIP – ΔIneligible	—	—	0.072 (0.004)	0.067 (0.004)	0.068 (0.004)
Panel C: Has Private Health Insurance Coverage					
Medicaid	0.329 (0.004)	0.396 (0.003)	0.066 (0.005)	0.054 (0.005)	0.053 (0.004)
SCHIP	0.690 (0.006)	0.657 (0.004)	–0.032 (0.007)	–0.023 (0.006)	–0.021 (0.006)
Ineligible	0.894 (0.002)	0.882 (0.002)	–0.012 (0.003)	–0.014 (0.003)	–0.011 (0.003)
Δ SCHIP – ΔMedicaid	—	—	–0.098 (0.008)	–0.077 (0.008)	–0.074 (0.008)
Δ SCHIP – ΔIneligible	—	—	–0.020 (0.006)	–0.009 (0.005)	–0.009 (0.005)

Note: Standard errors are in parentheses. SCHIP-eligible in 1997 refer to those children that are hypothetically eligible in 1997 for SCHIP benefits under the 2001 eligibility criteria. Unadjusted changes refer to the difference in means between the coverage rates reported in the second and third columns. Adjusted change 1 refers to the corresponding regression-adjusted change, where the regression specification includes a third-order polynomial in age, a male dummy variable, and a full set of dummy variables indicating household income relative to the poverty line in 25 percent increments (omitted category includes children with household incomes that are 400 percent or more of the poverty line). Adjusted change 2 refers to the regression-adjusted change including all variables in the previous specification plus a full set of state dummy variables. Separate models are estimates for the Medicaid-eligible, SCHIP-eligible, and ineligible populations.

points, a pattern most likely driven by the strong labor market and the impact of welfare reform on Medicaid take-up rates. For SCHIP-eligible children, private coverage declines by 3.2 percentage points, with regression-adjusted declines of roughly 2 percentage points. Among the ineligible, private coverage declines by approximately 1 percentage point.

The results for SCHIP-eligible children indicate overall program take-up rates ranging from 10.1 to 10.5 percent. In conjunction with the observed declines in private coverage, these figures suggest that between 21 percent (based on the adjusted changes) and 30 percent (based on the unadjusted changes) of the increase in public coverage is offset by a decline in private coverage. LoSasso and Buchmueller (2004) present the most thorough study of take-up and crowd-out in the SCHIP program. Using a somewhat different eligibility imputation procedure, the authors find take-up rates ranging from 3.5 to 10.5 percentage points and crowd-out ranging from 18 to 50 percent. Thus, our base estimates are consistent with existing research.

The Effects of State-Level Policy Efforts

Tables 4 and 5 present our estimates of the effect of state-level policy on take-up and crowd-out. The tables present alternative specifications of the take-up model in Equation 3 and the crowd-out model in Equation 4. In both tables, the regressions are estimated restricting the sample to SCHIP-eligible children. Recall, Equation 3 models the likelihood of public coverage as a function of a 2001 year dummy, a set of dummy variables indicating the policy design features used by the person's state of residence, a complete set of interaction terms between the year and policy design dummies, and a set of additional covariates. The coefficients on the interaction terms provide our estimates of the effect of each policy variable on the state-specific take-up rate. Equation 4 uses the same specification, but the dependent variable is an indicator of whether the child has private coverage. In addition to personal and family characteristics,[20] the models in Table 4 include state-level random effects while the models in Table 5 add a full set of state fixed effects.

In both tables we present the base effect estimates for each policy variable in the first column and the coefficient on the interaction term with the year dummy in the second. The take-up model results show significant empirical relationships between several policy design features and relative take-up rates. In both the random and fixed effects models, eliminating the asset test is associated with a statistically significant 17 percentage point increase in take-up. Continuous coverage is associated with a 5.7 percentage point increase in take-up in the random effects model and a 3 percentage point increase in the fixed effects model (although the latter is not statistically significant). Allowing for joint applications during the renewal process increases relative take-up by between 5.5 and 7.5 percentage points. Finally, extending benefits to parents is associated with significant and substantial increases in take-up in both specifications. In the random effects model, there is a relative increase in take-up of 11 percentage points among states that extend benefits to parents. The comparable figure from the fixed effects model is roughly 8 percentage points.

In addition to being statistically significant, these effect sizes are clearly economically significant, in that relative to the average take-up rate for the program (around 10 percent) they are quite large. They are also large relative to the degree of cross-state variation in take-up rates evident in Figure 2 (where states exhibit increases in public coverage among SCHIP-eligible children as high as 30 percent). The size of these effects suggests that a fair portion of the variation in take-up rates across state may be attributable to inter-state disparities in program implementation (an issue we explore in the next section).

We also find evidence of a consistent and substantial negative effect of several of the policy design features. As predicted, having SCHIP programs that are separate from the state Medicaid program is associated with significantly lower take-up rates (ranging from 8 to 10 percentage points). Waiting periods consistently reduce take-up rates. Relative to states with no waiting periods, states that require a mandatory period of time after losing private health insurance to qualify for

[20] The additional covariates include a third-order polynomial in age, a male dummy, dummies for income relative to the poverty line in 25 percent increments (over 400 percent being the omitted category), dummies for the race of the child and parent, dummies for the parent's marital status, and whether the parent and child are immigrants. The random effect models in Table 4 also includes dummies indicating states in the Northeast, Midwest, and South and interaction terms between these regional dummies and the 2001 year dummy. These region dummies are dropped in Table 5.

Table 4. Random effects regression estimates of the effect of state outreach and anti-crowd-out policy on the take-up of public benefits and likelihood of being covered by private health insurance.

	Public Coverage		Private Coverage	
	Base Effect	Interaction with 2001 dummy	Base effect	Interaction with 2001 dummy
Intercept	–0.050	0.061	1.1657***	–0.275**
	(0.102)	(0.110)	(0.124)	(0.133)
Age-specific Medicaid elig.	0.013	0.016	–0.059*	0.069*
	(0.026)	(0.030)	(0.032)	(0.037)
Separate SCHIP program	0.007	–0.097**	0.065	–0.075
	(0.034)	(0.039)	(0.041)	(0.048)
No face-to-face interview	0.025	0.035	–0.153***	0.061
	(0.046)	(0.054)	(0.056)	(0.066)
No asset test	–0.011**	0.171***	0.011	–0.041
	(0.053)	(0.062)	(0.064)	(0.074)
Presumptive eligibility	0.087**	–0.037	–0.065**	–0.021
	(0.026)	(0.031)	(0.032)	(0.038)
Continuous coverage	–0.003	0.057***	0.029	–0.054**
	(0.018)	(0.021)	(0.022)	(0.026)
Renewal: Not face-to-face	–0.037	0.002	–0.088	0.168***
	(0.048)	(0.052)	(0.059)	(0.063)
Renewal: Joint application	–0.037	0.076***	–0.008	0.089***
	(0.021)	(0.024)	(0.026)	(0.029)
Self-report: Income	0.017	0.010	0.024	–0.031
	(0.018)	(0.020)	(0.021)	(0.024)
Self-report: Residence	–0.027	–0.062*	–0.014	0.082*
	(0.031)	(0.036)	(0.037)	(0.043)
Self-report: Child age	0.058	–0.023	0.029	0.027
	(0.039)	(0.047)	(0.048)	(0.056)
Family application	0.008	–0.016	–0.006	–0.012
	(0.020)	(0.023)	(0.024)	(0.028)
Medicaid to parents	0.004	0.016	–0.022	0.002
	(0.026)	(0.027)	(0.027)	(0.033)
Renewal family	0.034	–0.027	0.009	–0.048
	(0.023)	(0.027)	(0.028)	(0.033)
Extend benefits to parents	–0.112***	0.111**	0.091*	–0.044
	(0.038)	(0.043)	(0.047)	(0.052)
Waiting period, 1 to 3 months	0.033	–0.060**	–0.072***	0.020
	(0.021)	(0.024)	(0.026)	(0.029)
Waiting period, more than 4 months	0.056***	–0.061***	0.001	0.016
	(0.020)	(0.022)	(0.024)	(0.027)

Note: Standard errors are in parentheses. Each model includes a third-order polynomial in age, a male dummy, dummies for income relative to the poverty line in 25 percentage point increments (above 400 percent omitted), race of child and parent, marital status of parents, immigrant status of the child and parent, dummies for Northeast, Midwest, and South, and a set of interaction terms between the region dummies and the year 2001 dummy. The error term is specified as having state-specific variance components (that is, state random effects).

* significant at the 10 percent level.

** significant at the 5 percent level.

*** significant at the 1 percent level.

Table 5. Fixed effects regression estimates of the effect of state outreach and anti-crowd-out policy on the take-up of public benefits and likelihood of being covered by private health insurance.

	Public Coverage		Private Coverage	
	Base Effect	Interaction with 2001 dummy	Base effect	Interaction with 2001 dummy
Intercept	0.022	0.126	1.361***	–0.198
	(0.314)	(0.101)	(0.385)	(0.124)
Age-specific Medicaid elig.	–0.012	0.024	–0.050	0.131***
	(0.156)	(0.025)	(0.191)	(0.031)
Separate SCHIP program	–0.016	–0.078**	0.207	–0.170***
	(0.261)	(0.035)	(0.320)	(0.043)
No face-to-face interview	0.011	0.043	–0.127*	0.063
	(0.061)	(0.050)	(0.075)	(0.062)
No asset test	–0.138**	0.175***	0.070	–0.031
	(0.067)	(0.054)	(0.082)	(0.067)
Presumptive eligibility	0.188**	–0.043	–0.411***	–0.041
	(0.083)	(0.028)	(0.102)	(0.034)
Continuous coverage	–0.043	0.030	0.014	–0.019
	(0.118)	(0.019)	(0.145)	(0.023)
Renewal: Not face-to-face	0.005	–0.024	0.026	0.099*
	(0.087)	(0.049)	(0.106)	(0.060)
Renewal: Joint application	–0.068	0.055***	0.092**	0.085***
	(0.036)	(0.021)	(0.045)	(0.026)
Self-report: Income	0.084***	–0.008	–0.031	0.005
	(0.029)	(0.018)	(0.036)	(0.022)
Self-report: Residence	–0.021	–0.036	–0.110	0.141***
	(0.071)	(0.033)	(0.087)	(0.040)
Self-report: Child age	–0.086	–0.092***	–0.208	–0.061
	(0.141)	(0.042)	(0.173)	(0.052)
Family application	–0.039	–0.010	–0.012	–0.066**
	(0.056)	(0.022)	(0.069)	(0.027)
Medicaid to parents	0.036	0.023	–0.110	0.022
	(0.111)	(0.025)	(0.136)	(0.031)
Renewal family	0.061	–0.001	0.012	–0.061**
	(0.105)	(0.024)	(0.128)	(0.030)
Extend benefits to parents	–0.266**	0.076**	0.411**	–0.096**
	(0.132)	(0.038)	(0.162)	(0.047)
Waiting period, 1 to 3 months	0.221	–0.050**	–0.042***	0.036
	(0.130)	(0.021)	(0.159)	(0.026)
Waiting period, more than 4 months	0.219	–0.075***	–0.332*	0.032
	(0.153)	(0.020)	(0.188)	(0.024)

Note: Standard errors are in parentheses. Each model includes a full set of state fixed effects, a third-order polynomial in age, a male dummy, dummies for income relative to the poverty line in 25 percentage point increments (above 400 percent omitted), race of child and parent, marital status of parents, and immigrant status of the child and parent.
* significant at the 10 percent level.
** significant at the 5 percent level.
*** significant at the 1 percent level.

SCHIP benefits have take-up rates that are roughly 6 to 7 percentage points lower on average.

There are two anomalous results in the public coverage models in Tables 4 and 5. Specifically, in the random effects model, we find a negative significant effect of being allowed to self-report one's residence on take-up, while in the fixed effect model we find a significant negative effect of being allowed to self-report the child's age. Given that both design features suggest an easier and less burdensome application and certification process, one would expect a priori positive effects of each design feature on take-up.

The second models in Tables 4 and 5 present comparable results where the dependent variable is private coverage. Here, the interaction terms between the policy variables and the year dummy indicate the extent to which the policy differentially displaces private coverage, taking into account all of the other policy efforts of the state. To the extent that the policy effort crowds out private coverage, the marginal effect read off the interaction term should be of the opposite sign of the comparable marginal effect from the public coverage model.

The results from the random effects model in Table 4 indicate that only one of the policy design features that have a statistically significant positive effect on public coverage has a significant negative effect on private coverage. Specifically, allowing continuous coverage reduces private coverage by roughly 5.4 percent (nearly completely offsetting the increase in public coverage). For the remaining design variables that impact public coverage in the predicted manner, there are no offsetting changes in private coverage.

The private coverage models in Table 4 also reveal several anomalous results whereby specific design features are predicted to increase private coverage (the opposite of what theory would predict). We observe this pattern for states with no face-to-face interviews for renewal, states with joint applications, and states that allow self-declaration of residence. Of these four design features, only one yields a corresponding positive effect in public coverage take-up in the first model of Table 4 (renewal: joint application).

The fixed effect models yield more puzzling findings. Several of the variables predicted to increase public coverage appear to have significant positive effects on private coverage (the two renewal simplification provisions and the self-declaration of residence). Here we do find a negative and significant effect of extending benefits to parents on overall coverage that completely offsets the positive effect on public coverage.

Does State Variation in Policy Choices Explain Variation in Take-Up and Crowd-Out?

In Figure 2, we documented the considerable heterogeneity across states in SCHIP take-up as well as in the corresponding changes in private coverage rates. A natural set of questions to ask of the results presented in Tables 4 and 5 concerns the degree to which inter-state differences in policy design explain this variation. One might also be interested in assessing whether policy-induced variation in take-up effectively targets children that are unlikely to have private health benefits. Certain features may be more likely to enroll those with a high likelihood of private coverage (for example, waiving mandatory waiting periods) while others may be more effective in enrolling those with a low likelihood of private coverage (for example, allowing for presumptive eligibility). To the extent that policy features designed to encourage take-up impact different segments of the SCHIP-eligible population, a state's implementation form may impact the overall degree of private coverage crowd-out.

Here we explore these questions. We first assess the degree to which state differences in policy design explain state variation in take-up rates. We then assess the degree to which the crowd-out associated with policy-induced variation in take-up rates differs from the overall degree of crowd-out.

We begin by using our random effects model results from Table 4[21] to predict the change in public coverage that would have occurred for a given state based on the state's policy design choices. The expected value of public coverage for 1997 for a person with average values for the background covariates residing in state *j* is given by the equation

$$E(Public \mid Y2001 = 0, \bar{X}, Policy_j) = \alpha_0 + \kappa' Policy_j + \gamma'\bar{X} \qquad (5)$$

where $Policy_j$ is the vector of values for the policy dummies for state *j*. The comparable expected value for 2001 is given by the equation

$$E(Public \mid Y2001 = 1, \bar{X}, Policy_j) = \alpha_0 + \alpha_1 + (\kappa + \theta)'Policy_j + \gamma'\bar{X} \quad (6)$$

Subtracting Equation 5 from Equation 6 gives the predicted take-up rate attributable to the state's policy design choices, or

$$E(Public \mid Y2001 = 1, \bar{X}, Policy_j) - E(Public \mid Y2001 = 0, \bar{X}, Policy_j) = \alpha_1 + \theta'Policy_j \qquad (7)$$

which is the sum of the coefficients on the year dummy and the relevant policy interaction terms.

To assess the degree to which inter-state policy design variation explains inter-state differences in take-up, we estimate a bivariate regression of the actual state-level take-up rates (measured by the change in public coverage among SCHIP-eligible children, 1997 to 2001) against the predicted state-level take-up rates from Equation 7. Figure 5 graphically displays this regression where each data point is weighted by the number of observations used to calculate the public coverage rate in 1997.[22] There is a strong positive correlation between the predicted policy-induced take-up and the actual degree of take-up across states. Inter-state differences in quantifiable implementation strategies account for roughly 25 percent of the variation in take-up across states.

Next we turn to an assessment of the relative magnitude of private coverage crowd-out caused by policy-induced take-up. Figure 6 presents a scatter plot of the change in private health insurance at the state level against the predicted policy-induced change in program take-up. In conjunction with the results in Figure 2, the results in Figure 6 permit an assessment of whether policy-induced take-up encourages a greater or lesser degree of private coverage crowd-out than the take-up that would normally occur among children eligible for SCHIP benefits. The figure reveals a negative yet statistically insignificant relationship between predicted take-up rates and the change in private coverage. The point estimate of the slope coefficient suggests that a 1 percentage point policy-induced increase in take-up rates is predicted to decrease private sector coverage by approximately 0.21 percentage points. In Figure 2, which presented similar results where the observed change in

[21] We performed a similar exercise using the results in Table 5 and found nearly identical results.

[22] Weighting by the 2001 total and the average of the 1997 and 2001 total yields similar results to those presented in the picture. In addition, an unweighted regression yields a considerably higher R-squared.

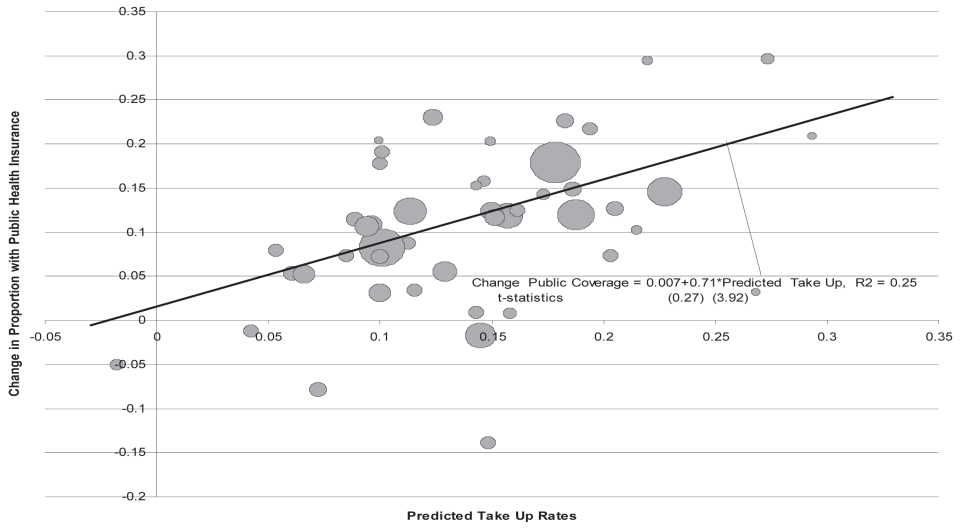

Figure 5. Scatter Plot of the 1997 to 2001 State-Level Change in Public Health Insurance Coverage Among SCHIP-Eligible Children Against the Predicted Policy-Induced Change in Public Health Insurance Coverage.

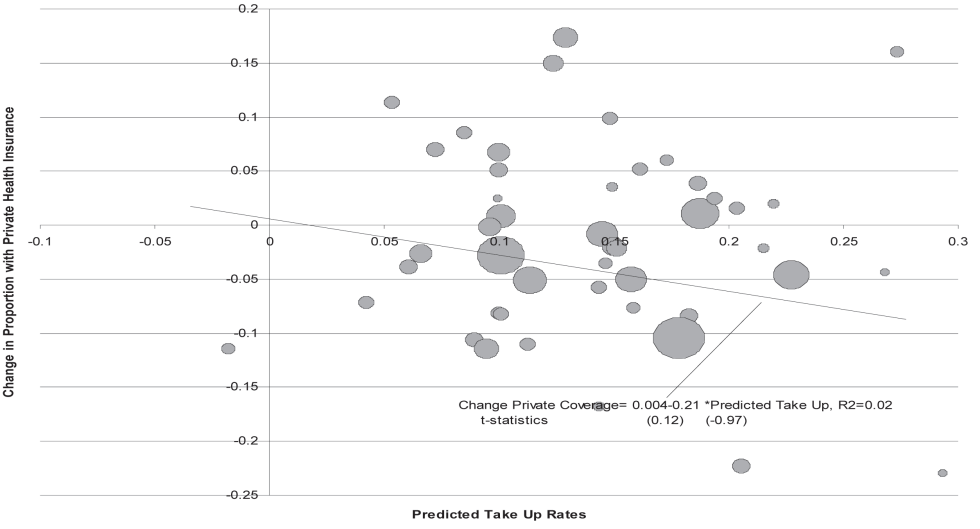

Figure 6. Scatter Plot of the 1997 to 2001 State-Level Change in Private Health Insurance Coverage Among SCHIP-Eligible Children Against the Predicted Policy-Induced Change in Public Health Insurance Coverage.

public coverage is substituted for the predicted take-up, the comparable crowd-out estimate is 0.25. A formal test of the equivalence of these two parameters estimates fails to reject the hypothesis that they are equal.[23]

CONCLUSION

The findings of this paper are several. Using data from the 1998 and 2002 CPS, we find evidence that the introduction of SCHIP has reduced the proportion of near-poor children lacking health insurance, although the overall take-up rate is quite low (approximately 10 percent). While not all of the state policy efforts are effective, several design mechanisms have significantly boosted take-up rates. Specifically, eliminating the asset test, allowing for continuous coverage, simplifying and consolidating public health insurance programs, and extending benefits to the parents of eligible children all have sizable positive effects on take-up rates. Moreover, our results suggest that approximately 25 percent of the inter-state variation in SCHIP take-up rates between 1997 and 2001 is attributable to inter-state differences in outreach policy choices. Given that the vast majority of uninsured children are eligible for Medicaid or SCHIP, much of the problem of uninsured children in the U.S. could be addressed through existing programs and more effective outreach efforts.

To be sure, states must balance enrollment growth against private coverage crowd-out in order to minimize the average program costs per newly insured individual. Given that SCHIP targets children at higher income levels who are more likely to have access to private health insurance, substitution of public for private insurance could be quite high. We find overall crowd-out rates ranging from one-quarter to one-third of the increase in public coverage. Regarding specific anti-crowd-out strategies, our results suggest that requiring a waiting period lowers take-up yet does not increase the degree of private coverage. Finally, we find very little evidence that policy-induced variation in take-up crowds out private coverage, and no evidence that the degree of crowd-out caused by policy choices is worse than that for the program overall. Thus, state outreach efforts do not exacerbate this problem.

Nevertheless, some degree of crowd-out is inevitable when extending public benefits to those who have access to private insurance. However, the costs of crowd-out may be partially offset by other collateral benefits to recipient households. Those who drop coverage may actually be better off if they end up with lower out-of-pocket costs and a more stable source of health insurance for their children and possibly themselves (if SCHIP benefits are extended to parents). In addition, working parents may no longer be "locked" into current jobs by the need to maintain health coverage for their children. Job mobility may rise for those with SCHIP-eligible children and the average quality of parental job matches may rise. Both issues provide fertile areas of inquiry for future research.

Moreover, some state efforts to limit crowd-out raise concerns regarding equity in the implementation of SCHIP. Precluding low-income families who have paid for private insurance in the past from coverage under the SCHIP program while extending benefits to those who did not raises obvious horizontal equity concerns.

[23] The regression model in Figure 6 is equivalent to the second stage regression in a 2SLS model where the first stage regresses take-up on the policy variables while the second stage regresses the change in private coverage on take-up. Thus, a Wu-Hausman exogeneity test provides the appropriate formal test for the equivalence of the slope coefficients in Figures 2 and 6. Performing this test fails to reject the hypothesis of equality.

While our results suggest that states may be able to boost enrollment through policy design choices, ongoing state budget crises are likely to limit such efforts, and thus the efficacy of the program. According to Hill, Stockdale, and Cournot (2004), most of the 13 states in their study cut spending *entirely* on SCHIP outreach. In addition, nearly one-third either reduced eligibility or capped enrollment. While political support for SCHIP remains strong and cuts in SCHIP budgets have been small relative to those imposed on other state programs, our findings suggest that these program rollbacks are likely to hamper further efforts to increase coverage.

CYNTHIA BANSAK is Assistant Professor in the Department of Economics at San Diego State University.

STEVEN RAPHAEL is Associate Professor at the Goldman School of Public Policy, University of California Berkeley.

ACKNOWLEDGMENTS

We are grateful to Genevieve Kenney for her valuable comments on an earlier draft of this paper. We thank Heather Mattson and Melissa Sills for their outstanding research assistance. We also thank the Economic Research Initiative of the Uninsured and the Robert Wood Johnson Foundation for their generous financial support.

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APPENDIX A

Table A

State	Plan Type (as of March 2001)	Plan Name	Medicaid % FPL <1/<6/6-14/15-18 (1997)	SCHIP %FPL infants/1-18 (2001)
Alabama	Combo	All Kids	33/133/100/15	200
Alaska	ME	Denali KidCare	133/100/100/76	200
Arizona	SP	KidsCare	140/ 133/100/32	200
Arkansas	ME	ARKidsFirst	200/200/200/200	200
California	Combo	Access for Infants and Mothers & Healthy Families	200/133/100/82	300/200
Colorado	SP	Children's Health Plan Plus (CHP+)	133/133/100/39	185
Connecticut	Combo	Husky A & Husky B	185/185/185/185	300
Delaware	SP	Delaware Healthy Children Program	185/133/100/100	200
DC	ME	Healthy DC Kids	185/133/100/37	200
Florida	Combo	Florida KidCare Program	185/133/100/28	200
Georgia	SP	PeachCare for Kids	185/133/100/39	235
Hawaii	ME	QUEST	185/133/100/100	200
Idaho	ME		133/133/100/29	150
Illinois	Combo	KidCare Assist, KdCare Share and KidCare Premium	133/133/100/46	200/185
Indiana	Combo	Hoosier Healthwise	150/133/100/100	200
Iowa	Combo	Healthy and Well Kids in Iowa (HAWK-I)	185/133/100/39	200
Kansas	SP	Health Wave	150/133/100/100	200
Kentucky	Combo	KCHIP	185/150/150/150	200
Louisiana	ME	LaCHIP	133/133/100/100	150
Maine	Combo	Cub Care	185/133/125/125	200
Maryland	ME	Maryland Children's Health Program	185/185/185/34	200
Massachusetts	Combo	MassHealth Standard, MassHealth, & MassHealth Family Assistance	185/133/133/133	200
Michigan	Combo	Healthy Kids & MIChild	185/150/150/150	200
Minnesota	ME	Minnesota Care	275/275/275/275	280/275
Mississippi	Combo		185/133/100/34	200
Missouri	ME	MC+ For Kids	185/133/100/100	300
Montana	SP	MT CHIP	133/133/100/41	150
Nebraska	ME	Kids Connection	150/133/100/34	185
Nevada	SP	Nevada CheckUp	133/133/100/45	200
New Hampshire	Combo	Healthy Kids Gold & Healthy Kids Silver	185/185/185/185	300
New Jersey	Combo	NJ FamilyCare Plan A & NJ FamilyCare Plans B, C, D	185/133/100/41	350
New Mexico	ME		185/185/185/185	235
New York	Combo	Child Health Plus (CHPlus)	185/133/100/87	185

(continued)

APPENDIX A *(continued)*

State	Plan Type (as of March 2001)	Plan Name	Medicaid % FPL <1/<6/6-14/15-18 (1997)	SCHIP %FPL infants/1-18 (2001)
North Carolina	SP	NC Health Choice for Children	133/133/100/100	200
North Dakota	Combo		133/133/100/100	140
Ohio	ME	Healthy Start	133/133/100/32	200
Oklahoma	ME	Sooner Care	150/133/100/48	185
Oregon	SP	OR CHIP	133/133/100/100	170
Pennsylvania	SP	PA CHIP	185/133/100/100	235
Rhode Island	ME	RIte Care	250/250/250/250	300
South Carolina	ME	Partners for Healthy Children	185/133/100/18	150
South Dakota	Combo	SD CHIP & CHIP NM	133/133/100/100	200
Tennessee	ME	TennCare 1115 Waiver	400/400/400/400	400
Texas	Combo	TX CHIP	185/133/100/17	200
Utah	SP	Utah CHIP	133/133/100/100	200
Vermont	SP	Dr. Dynassaur	225/225/225/225	300
Virginia	SP	FAMIS (Family Access to Medical Insurance Security Plan)	133/133/100/100	200
Washington	SP	Washington CHIP	200/200/200/200	250
West Virginia	Combo	WV CHIP	150/133/100/100	200
Wisconsin	ME	BadgerCare 1115 Waiver	185/185/100/100	185
Wyoming	SP	Wyoming Kid Care	133/133/100/55	133

APPENDIX B

Table B – Outreach and Anti-Crowdout Measures by State

	OUTREACH													ANTI-CROWDOUT											
State	Age-Specific Medicaid Eligibility Criteria		Separate SCHIP Program		Eliminated Face-to-Face Interview		Eliminated Asset Test		Presumptive Eligibility		12-month continuous eligibility		Eliminate Renewal Face-to-Face Int.		Joint Renewal Form		Self-Declaration of Income		Self-Declaration of Residency		Self-Declaration of Child's Age		Family Application		Expanded Medicaid for Parents		Family Renewal Form		SCHIP Benefits Offered to Parents		No Waiting Period		One Month Waiting Period		Two Month Waiting Period		Three Month Waiting Period		Four Month Waiting Period		Six Month Waiting Period		Twelve month waiting period	
Alabama	1		1		1		1		0		1		1		1		1		1		0		0		0		0		0		1		0		0		0	
Alaska	0		0		1		1		0		0		1		0		0		1		1		0		0		0		0		0		0		0		1	
Arizona	1		1		1		1		0		1		1		0		1		1		1		1		0		0		0		0		1		0		0	
Arkansas	0		0		1		1		0		0		1		0		1		1		0		0		0		0		0		0		0		0		1	
California	1		1		1		1		0		1		1		0		0		0		1		0		1		0		0		0		0		1		0	
Colorado	1		1		1		1		0		1		1		0		0		1		1		1		0		0		0		0		1		0		0	
Connecticut	0		1		1		1		0		1		1		1		1		1		1		1		1		1		0		0		0		1		0	
Deleware	1		1		1		1		0		1		1		1		0		1		1		1		1		1		0		0		0		0		1	
DC	0		0		1		1		0		0		1		0		0		0		1		1		1		0		1		0		0		0		0	
Florida	1		1		1		1		0		0		1		0		1		1		1		0		0		0		0		1		0		0		0	
Georgia	1		1		1		1		0		0		1		1		1		1		1		0		0		0		0		0		1		0		0	
Hawaii	0		0		1		1		0		0		1		0		0		1		1		0		1		1		0		1		0		0		0	
Idaho	0		0		1		0		0		1		1		0		1		1		1		0		0		1		0		1		0		0		0	
Illinois	1		1		1		1		0		1		1		0		0		1		1		0		0		0		0		0		1		0		0	
Indiana	0		1		1		1		0		1		1		1		0		0		1		0		0		0		0		0		1		0		0	
Iowa	1		1		1		1		0		1		1		0		0		1		1		0		0		0		0		0		0		0		1	
Kansas	1		1		1		1		0		1		1		1		0		1		1		1		0		1		0		1		0		0		0	
Kentucky	1		1		1		1		0		0		0		1		0		1		1		0		0		1		0		0		0		0		1	
Louisiana	0		0		1		1		0		1		1		0		0		1		1		0		0		1		0		1		0		0		0	
Maine	1		1		1		1		0		1		1		1		0		1		1		1		1		1		0		0		0		1		0	
Maryland	0		1		1		1		0		0		1		1		1		1		1		0		0		0		0		0		0		0		1	
Massachusetts	1		1		1		1		1		0		1		1		0		1		1		1		1		1		0		1		0		0		0	
Michigan	1		1		1		1		1		1		1		0		1		1		1		0		0		0		0		0		0		0		1	
Minnesota	1		0		1		1		0		0		1		1		1		1		1		1		1		0		1		0		0		0		1	
Mississipi	1		1		1		1		1		1		1		1		1		1		1		0		0		1		0		1		0		0		0	
Missouri	0		0		1		1		0		0		1		0		0		1		1		1		1		1		0		0		0		0		1	
Montana	1		1		1		1		0		1		1		0		0		1		1		0		0		0		0		0		0		1		0	
Nebraska	0		0		1		1		1		1		1		0		0		1		1		0		0		0		0		1		0		0		0	
Nevada	1		1		1		1		0		1		1		0		0		1		1		0		0		0		0		0		0		0		1	
New Hampshire	1		1		1		1		0		0		1		1		0		0		0		0		0		0		0		0		0		0		1	
New Jersey	1		1		1		1		1		0		1		1		0		1		0		1		1		1		0		0		0		0		1	
New Mexico	0		0		1		1		1		1		1		0		0		1		0		1		0		1		0		1		0		0		0	
New York	1		1		1		1		1		0		1		1		0		0		0		1		1		0		0		1		0		0		0	
North Carolina	1		1		1		1		0		1		1		1		0		1		1		0		0		1		0		0		1		0		0	
North Dakota	1		1		1		1		0		1		1		0		0		1		1		1		1		0		0		0		0		0		1	
Ohio	0		0		1		1		0		0		1		0		0		1		1		1		1		1		0		1		0		0		0	
Oklahoma	0		0		1		1		0		0		1		0		1		1		1		1		0		1		0		1		0		0		0	
Oregon	1		1		1		0		0		0		1		1		0		0		1		1		1		1		0		0		0		0		1	
Pennsylvania	1		1		1		1		0		1		1		0		0		1		1		1		0		0		0		1		0		0		0	
Rhode Island	0		0		1		1		0		0		1		0		0		1		1		1		1		1		1		1		0		0		0	
South Carolina	1		0		1		1		0		1		1		0		0		1		1		0		1		0		0		1		0		0		0	
South Dakota	0		1		1		1		0		0		1		1		0		1		1		1		0		1		0		0		0		0		0	
Tennessee	0		0		0		1		0		0		0		0		0		1		1		0		0		0		0		1		0		0		0	
Texas	1		1		1		1		0		1		1		0		0		1		1		0		0		0		0		0		0		1		0	
Utah	1		1		0		1		0		1		1		0		0		1		1		0		0		0		0		0		1		0		0	
Vermont	0		1		1		1		0		0		1		1		1		1		1		1		1		0		1		0		0		0		0	
Virginia	1		1		1		1		0		0		1		0		0		1		1		0		0		0		0		0		0		1		0	
Washington	0		1		1		1		0		1		1		1		1		1		1		0		1		1		0		0		0		1		0		0	
West Virginia	1		1		1		1		0		1		1		0		0		1		1		0		0		0		0		0		0		1		0	
Wisconsin	0		0		1		1		0		0		1		1		1		1		1		1		1		1		0		0		0		1		0	
Wyoming	1		1		1		1		0		1		1		1		1		1		1		1		0		1		0		0		1		0		0	
Total	31		35		49		49		7		28		49		21		15		45		46		23		19		24		4		18		1		2		13		2		14		1	