State Health Reform Assistance Network
Charting the Road to Coverage

ISSUE BRIEF
July 2012

Predicting the Health Insurance Coverage Impacts of Complex Policy Changes: A New Tool for States

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INTRODUCTION

The passage of the Affordable Care Act (ACA) in March 2010 highlighted the ongoing need for tools that state officials can use to project the impacts of complex policy changes on health insurance coverage. Possible approaches to this task range from simple spreadsheets to complex microsimulation models, with each approach having variations and tradeoffs in terms of cost, time, complexity, and adaptability for ongoing state analysis needs.[1]

Microsimulation models seek to predict the impacts of policy changes on the decisions of individuals, households, and employers. By modeling decisions at the individual employer and person levels, these models attempt to take into account how varying individual circumstances will affect aggregate outcomes. Several private organizations have developed proprietary microsimulation models, and states that wish to do this type of analysis have typically contracted with one of these organizations. However, the models vary in their approaches, assumptions, and predictions.[2]

Although microsimulation models are a valuable tool for estimating state-level impacts of health policy changes, there are several reasons why state officials are interested in other approaches as well. Microsimulation modeling is expensive, and for states it is typically a "one-shot" effort that produces estimates for a limited number of scenarios, without the flexibility to update baseline data or test different assumptions after the fact. In addition, from the state perspective microsimulation modeling is not very transparent. In addition, many microsimulation models rely primarily on national data as inputs, and many states are interested in using state-specific data.

To address the need among states for analysis that is timely, state-specific, less expensive, and more flexible for testing alternative assumptions, the State Health Access Data Assistance Center (SHADAC) at the University of Minnesota School of Public Health has developed a complex spreadsheet model – the SHADAC Projection Model – to predict the coverage impacts of policy changes at the state level. Although the model was constructed specifically to help states project the coverage impacts of the ACA, the approach can be adapted to model the coverage impacts of other reform approaches as well. The SHADAC Projection

ABOUT THE PROGRAM

State Health Reform Assistance Network, a program of the Robert Wood Johnson Foundation, provides in-depth technical support to states to maximize coverage gains as they implement key provisions of the Affordable Care Act. The program is managed by the Woodrow Wilson School of Public and International Affairs at Princeton University. For more information, visit *www.statenetwork.org*.

ABOUT SHADAC

The University of Minnesota's State Health Access Data Assistance Center (SHADAC) is funded by the Robert Wood Johnson Foundation to collect and analyze data to inform state health policy decisions relating to health insurance coverage and access to care. For more information on SHADAC and how we can assist your state, please visit *www.shadac.org*.

ABOUT THE ROBERT WOOD JOHNSON FOUNDATION

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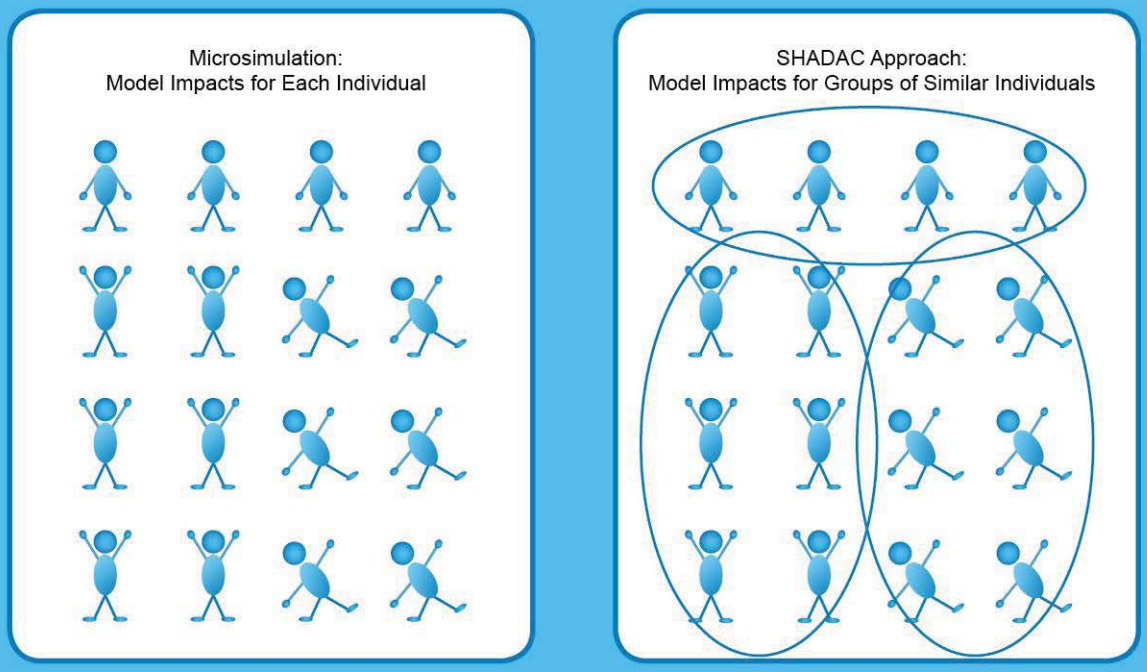
For more information, please contact SHADAC at shadac@umn.edu or 612-624-4802.

Model is designed to be flexible, evidence-based, transparent, and easy for state officials to understand and use independently. The model was developed with the support of the Robert Wood Johnson Foundation's State Health Reform Assistance Network program. The model was originally developed for one state, but it can be adapted and customized to meet the needs of other states relatively easily.

SHADAC PROJECTION MODEL APPROACH

Similar to a microsimulation model, the SHADAC Projection Model analyzes how policy changes affect individual and employer behaviors, and how these behavior changes translate into shifts in health insurance coverage. However, microsimulation models estimate these impacts at the individual level and then aggregate the effects, while the SHADAC Project Model begins with high-level assumptions about behavior changes and then translates these assumptions into impacts on groups of individuals that have similar characteristics. Figure 1 provides a graphic illustration of these differences in approach.

Figure 1
Modeling Approaches



Population Groups: The SHADAC Projection Model estimates the impacts of policy changes separately for population groups defined by age, income, current health insurance coverage type, and employer size. The category definitions can be customized depending on a state's needs. For example, the income ranges used will need to be specified for individual states because of existing variation in eligibility for Medicaid and the Children's Health Insurance Program (CHIP) across states. The characteristics that define the population groups used in the model are illustrated in Figure 2, and include the following:

- **Age:** Five separate age groups are included in the model. The 19 to 25 year old age group was chosen specifically for purposes of modeling the impacts of the ACA's expansion of employer-sponsored insurance (ESI) dependent coverage to young adults through age 25. The elderly are excluded from the model since they are not affected by the ACA's coverage provisions.

- **Insurance type:** Insurance types include employer-sponsored insurance (which includes military coverage for our purposes), nongroup coverage, Medicaid/CHIP, Medicare, and uninsured. Since some people have multiple sources

of coverage, we assign a primary source of coverage using a hierarchy that assigns Medicare first, followed by ESI, Medicaid/CHIP, and nongroup coverage.[3]

- **Income:** Income is measured in comparison to federal poverty guidelines (FPG) at the health insurance unit (HIU) level.[4] The income categories are chosen for each state based on (1) existing state Medicaid/CHIP eligibility standards for children and adults, and (2) income ranges that are relevant for ACA implementation (i.e., used to determine eligibility for premium tax credits and cost-sharing subsidies in the health insurance exchange or for the Basic Health Plan).

- **Employer size:** Employer size is also measured at the HIU level, since the HIU is most often the determinant of what ESI options are available to an individual. Employer size category is assigned to individuals using the largest employer in the HIU. In other words, if one adult in the HIU works for a small employer and the other works for a large employer, both are assigned to the large employer size category.

Figure 2
Population Categories Used in the SHADAC Projection Model

Age Groups	Insurance Types	Income Categories	Employer Size
0 to 18 19 to 25 26 to 44 45 to 54 55 to 64	ESI (includes military) Nongroup Medicaid/CHIP Medicare Uninsured	**Children** 0-Medicaid/CHIP% Medicaid/CHIP - 200% 201 - 250% 251 - 400% 401% or more **Adults** 0 - Medicaid% Medicaid - 138% 139 - 200% 201 - 250% 251 - 400% 401% or more	<=50 employees >50 employees No employer

Combination of the categories above results in 435 total combinations (75 for children and 360 for adults).

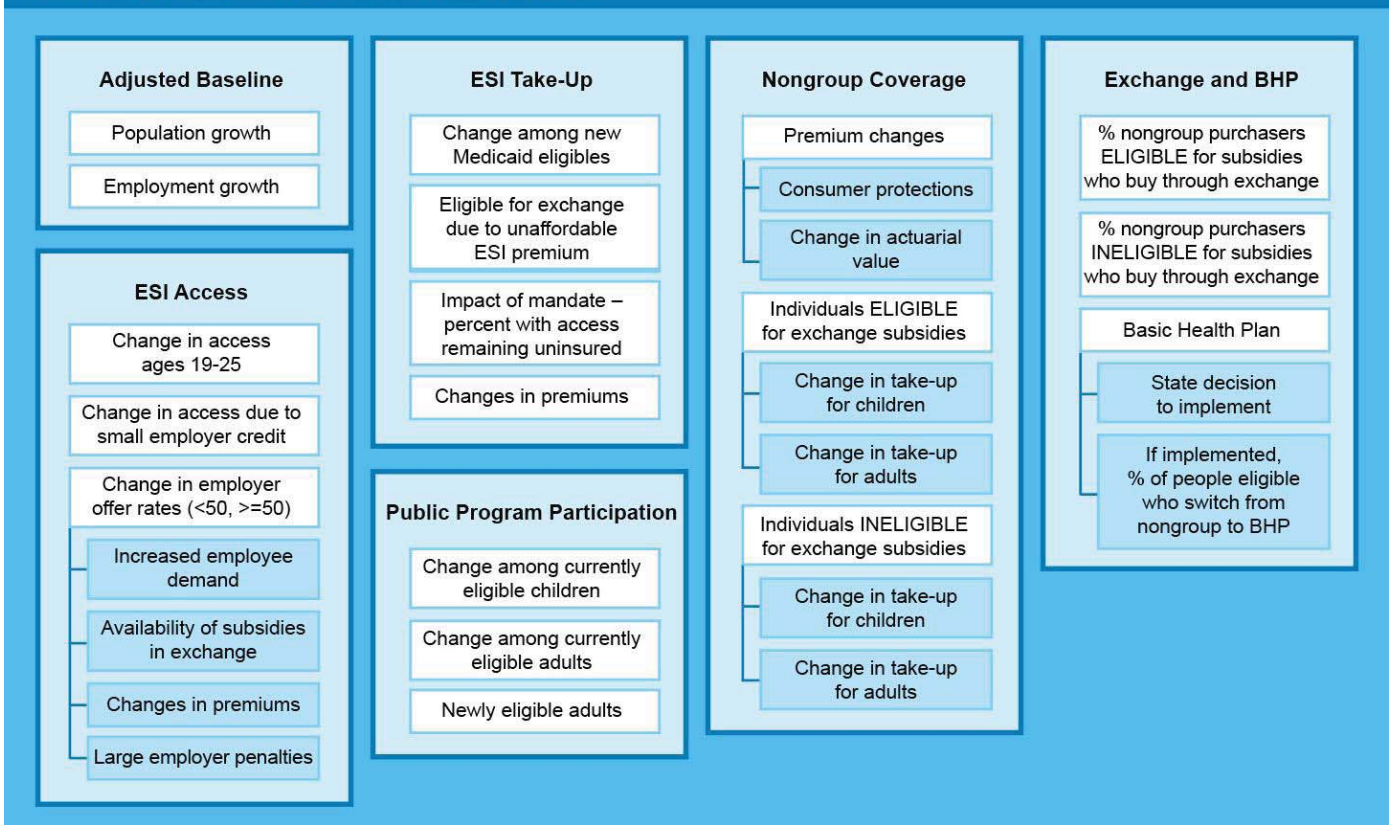
By estimating policy impacts separately for each combination of these characteristics, the model generates results for several hundred different age-income-insurance type-employer size categories (in the test state, the total number of combinations modeled was 435).

Analysis: The SHADAC Projection Model includes six main analysis modules. The first module projects state population and employment growth to the desired year, using assumptions about annual population and employment growth specified by the model user. This calculation serves as an "adjusted baseline" projection from which the impacts of policy changes are estimated. The subsequent modules begin from the specified adjusted baseline and estimate the impacts of the following: changes in access to ESI, changes in ESI take-up, changes in public program participation, changes in nongroup coverage, and assumptions about exchange/basic health plan participation.

Because a primary goal of the SHADAC Projection Model is to enable state officials to estimate the impacts of policies under a range of assumptions about how employers and individuals will react, the model includes a large number of assumptions that can be adjusted by the user. For example, one component of the model estimates the impact of changes in employers' decisions about whether to offer health insurance coverage. Employer decisions are influenced by several factors, including employee demand for coverage, other options available to employees (specific to the ACA, the availability of subsidized coverage through health insurance exchanges may influence employer decisions to offer coverage), and cost. For large

employers, employer penalties in the ACA will also influence offer rates. There is substantial uncertainty about how the ACA will influence each of these factors, and the SHADAC Projection Model allows state officials to make assumptions for how each of these factors will influence employer decisions to offer coverage. The model translates these high-level, user-specified assumptions about how employers will respond into impacts for specific groups of people within a state (for example, people ages 26 to 44 with incomes between 139 percent and 200 percent of federal poverty guidelines who work for small employers and currently have ESI). The assumptions that users can modify are depicted for each of the six analysis modules in Figure 3, with more complete descriptions in the Appendix.

Figure 3
SHADAC Projection Model User Modifiable Assumptions



One potential danger with a model that allows users to adjust the assumptions is that users might choose assumptions that are not supported by evidence. To encourage the most appropriate use of the SHADAC Projection Model, we provide a set of default assumptions that draw on published research, especially published projections of the ACA's impacts made using microsimulation models. These assumptions and the basis for them are described in more detail in the Appendix to this brief. For each assumption, we provide a default value (which is customized to the particular state being analyzed) and the reasoning that supported this choice. The model user can choose whether to use the default assumption or select a different value. We also provide appropriate context to help model users choose assumptions; for example, in the section where users can modify the assumption about how ESI offer rates by small employers will change, the model also displays the current offer rate.

DATA SOURCES

To the extent possible, the SHADAC Projection Model relies on the most recent available state-specific data. The main data source for the model is the 2010 American Community Survey (ACS), from which we obtain age, income, insurance type, and employment status. A significant advantage of the ACS for this type of state-level modeling is its very large sample size

– for the test state, there are over 82,000 observations for the nonelderly population in the ACS public use file for 2010. This large sample size enables the modeling for detailed state-level age-income-insurance type-employer size combinations.

The SHADAC Projection Model also requires individual-level information on employer size, access to ESI, and health status that is not available in the ACS. We estimate these characteristics by using regional data from the 2009 Medical Expenditure Panel Survey Household Component (MEPS-HC). The employer size, access to ESI, and health status variables are statistically matched from the MEPS-HC to the ACS using age, income, insurance type, region, employment sector, race, marital status, education, sex, and industry. The resulting database is used to create counts for the age-income-insurance type-employer size categories that are the starting point of the spreadsheet model.

For employer information (such as ESI offer rates by employer size), the SHADAC Projection Model uses state-specific estimates from the Medical Expenditure Panel Survey Insurance Component (MEPS-IC). We average the two most recent years of data, 2009 and 2010, to obtain more stable estimates.

MODEL OUTPUT

The end result of the modeling process is an estimated number of people in each of the age-income-insurance type-employer size categories. The model's summary output tables describe the projected distribution of health insurance coverage separately by age, income, and employer size; other tables illustrate shifts in coverage between the baseline and the model projections (see Figure 4). The model also estimates enrollment inside and outside of the health insurance exchange, and it includes an option for the user to estimate the impact of implementing a Basic Health Plan. Finally, the model also produces a crude estimate of newly eligible versus previously eligible Medicaid enrollment.[5]

Figure 4
SHADAC Projection Model Output Tables

Projected distribution of health insurance coverage, by age group
Projected distribution of health insurance coverage, by income • Separate tables for ages 0-64, 0-18, and 19-64
Projected distribution of health insurance coverage, by employer size
Shifts in health insurance coverage distribution, by age
Shifts in health insurance coverage distribution, by employer size
Medicaid/CHIP enrollment, previously eligible and newly eligible

DISCUSSION

The SHADAC Projection Model is a customizable tool for state officials to use in estimating the impacts of the ACA in their states under a variety of different assumptions. While the model itself is quite complex, it is designed to be easy for state officials to use and completely transparent. Because the model uses state-specific data and because the relevant parameters or assumptions may vary by state,[6] the model will need to be customized for each state in which it is used. However, the basic approach and model structure will be similar across states. Findings from other research, including microsimulation modeling, can and should be used to inform the user-specified assumptions that are key inputs to the SHADAC Projection Model. While our spreadsheet modeling approach has some advantages over a microsimulation approach in terms of user flexibility, cost, and timeliness, there are also tradeoffs that state officials will need to consider. The SHADAC Projection Model's approach of estimating aggregate impacts and then allocating them across groups of people instead of estimating the impacts at the individual level and aggregating to the population is the key difference that needs to be kept in mind. It is our view that the SHADAC Projection Model is a valuable new tool for state officials as they work to estimate the impacts of complex policy changes. Although the model was developed for purposes of estimating the state-level coverage impacts of the ACA, the approach can be generalized to other health policy changes as well.

Appendix: SHADAC Projection Model Default Assumptions

Many of the assumptions that drive the SHADAC Projection Model can be modified by the model user. To encourage the most appropriate use of the model, we provide a set of default assumptions that draw on published research, especially published projections of the ACA's impacts that have been estimated using microsimulation models. These assumptions and the basis for them are described in more detail in this Appendix.

Population and employment growth: Ideally, default population growth rates by age group will be based on the state's own most recent demographic projections. The model allows the user to apply multiple population growth rates that are age-specific or a single aggregate growth rate that is applied uniformly to all age groups; although the aggregate rate is simpler to use, we recommend using age-specific rates when possible because they are more accurate. The user enters his or her chosen assumption into the model as an annual growth rate; this assumption is then combined with the time horizon specified by the user to determine total population growth over the time period being modeled.

The default assumption for annual employment growth (number of workers) is based on state-specific annual average growth rates from the American Community Survey. The user enters this assumption into the model as an annual growth rate; this assumption is then combined with the time horizon specified by the user to determine total employment growth over the time period being modeled. The default assumption is based on the 2006 to 2010 annual average change, which includes both good and bad economic years; this is likely more accurate than using only the most recent year or two of job growth, but the assumption can be easily modified as states' economic conditions improve and new data become available.

ESI access – dependent coverage for 19 to 25 year olds: This assumption represents the total percentage point change in access to ESI for 19 to 25 year olds that occurs due to the requirement in the Affordable Care Act (ACA) that employers offering dependent coverage allow dependents to remain enrolled in their parents' plans until age 26. The default assumption is based on two factors: (1) the percentage of this age group that had access to ESI coverage (whether own-name coverage or coverage through a parent) prior to ACA enactment; and (2) whether the state had already enacted its own law expanding dependent coverage. (In this part of the model, we assume that ESI take-up among young adults with access to ESI is unchanged.) Although it is difficult to estimate what percentage of young adults have gained access to ESI as a result of the ACA, early evidence suggests that the percentage of this group that has private health insurance has already increased significantly.[7] In states that had not already enacted some form of dependent coverage expansion for young adults prior to the ACA,[8] the potential impact of this ACA provision may be larger than the national average.

ESI access – change in employer offer rates: The model estimates the impact of five factors that could cause changes in ESI offer rates. Separate assumptions are incorporated for small and large firms, because some of the ACA's provisions are specific to particular firm sizes and/or have different effects depending on firm size. The factors that influence employer offer rates include: (1) an increase in the offer rate due to the small employer health insurance premium tax credit; (2) an increase in the offer rate in response to higher employee demand for coverage (because of the individual mandate); (3) a reduced offer rate by employers that have large numbers of employees who will be eligible for subsidies in the exchange; (4) an increase or decrease in the offer rate in response to premium changes; and (5) an increase in the offer rate due to the potential employer penalties for not offering coverage (large firms only).

- Increase in offer rate due to small employer tax credit: The ACA provides a health insurance premium tax credit for employers with 25 or fewer employees and average annual wages of less than $50,000. The credit is available to employers that previously offered coverage as well as to those who newly offer coverage; however, for purposes of analyzing coverage changes only those employers that choose to begin offering coverage in response to the tax credit are relevant to the model. The model estimates the impact of changes in health insurance offer separately for employers with fewer than 10 workers and employers with 10 to 24 workers, since offer rates for these two groups of firms are very different (31.8 percent for firms under 10 and 60.9 percent for firms with 10 to 24 employees nationally in 2010[9]). The model estimates how many people would gain ESI coverage given user-defined assumptions about the increase in health insurance offer rates among these two firm sizes and given existing patterns of employee eligibility, take-up rates, and family vs. single coverage enrollments in firms that offer coverage.

  The Congressional Budget Office (CBO) model has estimated that about 0.5 to 1 million people could gain ESI coverage due to the small employer tax credit[10]; the midpoint of this estimate (0.75 million) combined with a baseline of 150

million people with ESI coverage translates into a coverage impact of about 0.5 percent. We translate this overall coverage impact to the ESI offer rate to calculate default assumptions in the SHADAC Projection Model for the change in ESI offer rate among firms with fewer than 10 and 10-24 employees.[11]

- Increase in offer due to higher employee demand: Results from national microsimulation models vary on the degree to which employer offers of ESI coverage will increase due to higher employee demand. The CBO estimate of the increase in the number of people covered due to this factor is quite modest – about 2 to 5 million people, compared to a baseline of 150 million people covered by ESI.[12] In contrast, the RAND Corporation's COMPARE model estimates a large increase in employer ESI offers – from 58.8 percent to 80.5 percent, with larger increases for small firms.[13] The default assumption in the SHADAC Projection Model is based on the more modest increases in ESI offer predicted by CBO. We use the midpoint estimate of 3.5 million from the CBO model and a baseline of 150 million people with ESI coverage, which translates into a coverage impact of about 2.3 percent. We calculate the default assumptions of the SHADAC Projection Model by translating the overall coverage impact to the ESI offer rate separately for small and large firms separately in a manner similar to the method we use for the small employer tax credit above.

- Reduced offer due to availability of subsidies in the exchange: Some employers are likely to drop ESI coverage if they have large numbers of employees who would be eligible for subsidies in the exchange. Employers that drop ESI are likely to have a predominantly lower-income workforce, but these employers are also less likely to offer ESI in the first place. Most low-wage workers are in firms with a mix of wage levels,[14] which means that their employers are probably not highly likely to drop ESI benefits as a result of the availability of subsidized coverage elsewhere. As a result, the overall impact of employers dropping ESI benefits because most of their employees are eligible for exchange subsidies is likely to be modest. Estimates from the CBO model indicate that about five to 10 million people could lose ESI coverage due to the availability of subsidies through the exchange[15]; the midpoint estimate (7.5 million) taken together with a baseline of 150 million people with ESI coverage translates into a coverage impact of about 5 percent. We calculate the default assumptions of the SHADAC Projection Model by translating the overall coverage impact to the ESI offer rate for small and large firms separately in a manner similar to the method we used for the small employer tax credit above.

- Impact of premium changes: National microsimulation models estimate that the ACA's impact on premiums will be fairly modest: the CBO estimates a that, compared to projected premiums in the absence of the ACA, the impact on small group premiums will range from a two percent decline to a one percent increase, and the large group premium impact will range from a three percent decline to a zero percent change.[16] The RAND Corporation's model estimates a two percent decline in premiums compared to projections without the reforms.[17] The federal government's analysis of the premium impacts of the various consumer protections in the law, such as prohibitions on lifetime and annual benefit limits, suggests a modest increase in premiums.[18] Since the CBO and RAND models incorporate other impacts into their premium change estimates, such as movements in the age and health composition of the market, their calculations are more useful for purposes of the SHADAC Projection Model than the federal estimates associated with the consumer protections alone. The default assumptions of the SHADAC Projection Model are the midpoints of the CBO range of estimates (0.5 percent for the small group market and -1.5 percent for the large group market). We combine the assumption about the estimated premium changes with an estimate of the impact of premium changes on employer ESI offer rates from empirical research to calculate the impact of premium increases on employer offers of ESI.[19]

- Impact of employer penalties: The CBO model estimates that about 500,000 to one million people could gain ESI coverage from employers who begin offering coverage to avoid the ACA's penalty for not doing so.[20] The SHADAC Projection model uses the midpoint estimate (0.75 million) from the CBO calculations and a baseline of 150 million people with ESI coverage to estimate a coverage impact of about 0.5 percent. We translate this coverage impact to a default assumption for the large firm ESI offer impact using methods similar to the one we used for the small employer tax credit above (small firms are not affected by this provision of the law).

ESI take-up: The SHADAC Projection Model estimates the impact of four factors that could cause changes in the rate at which people take up ESI coverage when it is available. Separate assumptions are incorporated for people with access to ESI through small firms and those with access to ESI through large firms. The four factors that influence ESI take-up rates include: (1) a reduction in ESI take-up among people who will be newly eligible for Medicaid; (2) a reduction in ESI take-up among people for whom ESI premiums are greater than 9.5 percent of income for employee-only coverage and who will

thereby have access to subsidized coverage through the exchange at a substantially lower cost; (3) an increase in ESI take-up due to the individual mandate; and (4) a change in ESI take-up due to changes in premiums.

- Reduced take-up among people newly eligible for Medicaid: Some people who currently have ESI coverage and become Medicaid-eligible are likely to drop their ESI coverage and enroll in Medicaid. However, it is important to note that ESI take-up rates are very high among people who are currently income-eligible for Medicaid. Thus, the decline in ESI take-up due to the Medicaid expansion seems likely to be modest. The default assumption in the model is a decline of 5 percentage points, applied only to people with incomes between the state's current Medicaid eligibility threshold for adults and 138 percent of federal poverty guidelines.

- Reduced take-up among people with unaffordable ESI coverage who will be eligible for exchange subsidies: For this group, the potential savings related to switching from ESI coverage to the exchange is large. By comparing the distribution of premiums in the test state to federal poverty guidelines, we ascertained that the large majority of people affected by this provision of the law are in the 139 to 200 percent FPG category; within this category, about 5 percent are potentially affected. By definition, this group is paying 9.5 percent or more of their income for ESI coverage; their premium contributions in the exchange will be between 3 and 6.3 percent of income, with additional subsidies for cost-sharing requirements. We could not locate any published estimates of the likely size of this effect, and so the default assumption in the model is a subjective one. The default assumption is that 20 percent of people who could drop ESI and receive exchange subsidies instead will choose to do so.

- Increased take-up due to individual mandate: In the model, the increase in ESI take-up due to the individual mandate is estimated using an assumption about the change in the percentage of people who have access to ESI but remain uninsured. We could not locate any published estimates of the likely size of this effect, and so the default assumption in the model is a subjective one. Based on our baseline data from ACS and MEPS-HC, we estimate that about 4.3 percent of people with access to ESI in the test state are uninsured; the default assumption in the model is that this proportion will be cut in half.

- Change in ESI take-up due to premium changes: To estimate the impact of premium changes on individuals' take-up of ESI, the model applies the same premium changes that were used to estimate the change in employer ESI offer rates (defaults of -0.5 and -1.5 percentage points in the small group and large group markets, respectively). Implicitly, this assumes that premium changes are distributed equally between employers and employees. The assumption about the estimated premium changes is combined with an estimate of the impact of premium changes on individuals' ESI take-up rates from empirical research to calculate the impact of premium increases on employer offers of ESI.[21]

Public program participation: There are three components to the model that estimate changes in public program participation.[22] Separate assumptions are applied for changes in public program participation by currently eligible children, currently eligible adults, and newly eligible adults. For the currently eligible population, the denominator for the participation rate assumption is the sum of Medicaid/CHIP enrollment and the number of uninsured. For the population that will be newly eligible, the denominator for the participation rate assumption is the number of people who will be newly eligible for Medicaid, without regard to their current insurance status. Particularly for the people who are currently eligible, the assumption about the change in the participation rate in public programs will be a key driver of state cost projections. Unfortunately, there are few sources of information to inform assumptions about how this number will change; because of this, the default assumptions in the model are subjective ones. We describe each of the participation rate assumptions below:

- Currently eligible children: In the test state, the baseline data showed that about 90 percent of currently eligible children who don't have private coverage are enrolled in Medicaid/CHIP. The degree to which currently eligible children enroll in Medicaid/CHIP will depend on a variety of factors, including the effectiveness of outreach efforts. The default assumption is that the gap between current participation and full participation will be reduced by one third.

- Currently eligible adults: Baseline participation rates among currently eligible adults are much lower than they are for children, at about 41 percent in the test state. As is the case for children, there are a number of factors that will influence the participation rate for adults. The default assumption in the model is that the gap between current participation and full participation will be reduced by about one third.

- Newly eligible adults: As with currently eligible children and adults, the share of newly eligible adults who participate in Medicaid will depend on a number of factors, including the effectiveness of outreach programs. One national analysis assumes that the participation rate for new eligibles will be about 57 percent in a "standard" scenario and 75 percent in an "enhanced" scenario with more aggressive outreach.[23] The default assumption in the model is 60 percent, which is at the lower end of this range.

Nongroup coverage: The analysis of changes in nongroup coverage has several components. First, changes in premiums for nongroup coverage will have an effect on the number of people enrolled; second, the availability of subsidies will influence the degree to which people purchase nongroup coverage; and finally, the individual mandate will also affect enrollment.

- Premium changes: There are two assumptions in the model related to how premiums for nongroup coverage will change.[24] First, premiums may increase due to the implementation of the consumer protections included in the ACA – for example, prohibitions on lifetime and annual coverage limits, pre-existing condition exclusions, and rescissions. An analysis of the premium impacts of the consumer protections in the law was included in the preamble to the federal rule that implements these provisions; although substantial uncertainty was noted, the overall impact is expected to be small. The default assumption of the premium increase associated with the consumer protection provisions is 1.5 percent, which is consistent with the estimates in the proposed rule.

  The second assumption related to premiums is about how the increase in actuarial value of plans will affect premiums; to the degree possible, the model's default assumption about the impact on premiums should be based on state-specific data about current actuarial values in the nongroup market. In the absence of state-specific information, one could assume that actuarial values are similar to the national average (55-60 percent), that average actuarial values would increase to 70 percent under the ACA (since subsidies for premiums and cost sharing are tied to this level), and that use of health care services will increase by 1 to 2 percent for every 10 percent decrease in enrollee cost sharing.[25] The default assumption using these national averages is a 12.5 percentage point increase in actuarial value, and an additional 1.9 percentage point increase associated with increased use of health care services, for a total of 14.4 percentage points.

- Availability of subsidies: This part of the model is based on assumptions about how the take-up of nongroup coverage will change among people who are not enrolled in ESI or state programs. These take-up rates are calculated as the number of people with nongroup coverage divided by the sum of nongroup coverage and uninsured. Separate assumptions are included for children and adults, since current nongroup coverage take-up rates are substantially different for these 2 groups (about 55 percent and 27 percent for children and adults in the test state, respectively). The default assumptions are based on an estimate from CBO that people who receive subsidies will receive a reduction in premiums of about 56 to 59 percent.[26] We combined this change in price with an estimated responsiveness of individuals to price changes in the nongroup market (0.4 percent increase in coverage for every 1 percent decline in premiums)[27] to estimate a 12.5 percentage point increase in the nongroup take-up rate for children, and a 6.1 percentage point increase for adults in the test state. The default assumptions in the model increase take-up rates by an additional amount to reflect the likely increase in participation due to the individual mandate and penalties. Because we lacked published estimates of this impact, the default assumption is subjective: the mandate is assumed to reduce the remaining gap between predicted participation and full participation by one-half.

- Individual mandate: As with the assumptions for take-up of nongroup coverage for people who are eligible for subsidies, the default assumption for increase in take-up among people whose income is too high to qualify for subsidies is based on reducing the gap between current take-up rates and full participation. Because we lacked published estimates of this impact, the default assumption is subjective: the default assumption reduces the gap between current nongroup take-up and full participation by half.

Exchange/Basic Health Plan: With regard to the health insurance exchange, the model relies on two key assumptions: (1) among people buying nongroup coverage and who are eligible for subsidies, the percent who purchase through the exchange; and (2) among people buying nongroup coverage who are not eligible for subsidies, the percent who purchase through the exchange. The first group has a strong incentive to purchase through the exchange, while the second group will likely have no financial incentive to do so – although they might find it convenient. The default assumptions in the model are that 90 percent of subsidy-eligible people buying nongroup coverage purchase through the exchange, and that 15 percent of nongroup coverage enrollees who are not eligible for subsidies purchase through the exchange. There is little evidence

available to inform these assumptions, but in Massachusetts (where an insurance exchange has been in place for several years) a very large share of coverage purchased through the exchange is subsidized.[28]

The model allows the user to specify whether a Basic Health Plan will be implemented (a yes/no assumption) and includes an assumption for the percentage of people who are income-eligible for the BHP who will switch from nongroup coverage to the BHP if it is implemented. Again, there is little evidence on which to base this assumption, but the proportion is likely to be high because the alternative for this group would be to purchase unsubsidized coverage outside the exchange. The default assumption is that 75 percent of people with incomes from 139 to 200 percent of FPG who would otherwise purchase nongroup coverage will participate in the BHP; however, take-up will likely vary substantially depending on how states choose to structure the BHP premiums and benefits.

Appendix Table
User-Modifiable Assumptions in the SHADAC Projection Model

1. Adjusted Baseline
Baseline year
Projection year
Annual population growth, by age group
Annual employment growth
2. ESI Access
Percentage point change in access to ESI for 19 to 25 year olds
Percentage point change in small employers offering coverage (<10, 10-24)
Changes in employer offer rates (<=50 and >50 separately): • Impact of increased employee demand • Impact of availability of subsidized coverage in exchange • Percent change in ESI premiums • Impact of employer penalties (large employers only)
3. ESI Take-Up
Change in ESI take-up among people who will be newly Medicaid eligible
Percent of people with unaffordable ESI premium who drop it for exchange coverage
Change in percent of people with access to ESI who remain uninsured
Percent change in ESI premiums (by employer size)
4. Public Program Participation
Change in public program participation* for: • Currently eligible children • Currently eligible adults
Participation rate of newly eligible adults
5. Nongroup Coverage
Premium changes • Due to change in consumer protections • Due to change in actuarial value
For people in income groups eligible for subsidies: • Change in take-up** of nongroup coverage for children • Change in take-up of nongroup coverage for adults
For people in income groups too high for subsidies: • Change in take-up of nongroup coverage for children • Change in take-up of nongroup coverage for adults
6. Exchange and Basic Health Plan
% of nongroup coverage purchasers eligible for subsidies who purchase through exchange
% of nongroup coverage purchasers ineligible for subsidies who purchase through exchange
State choice to implement Basic Health Plan (yes/no)
If BHP implemented, % of people 139-200% FPG who switch from nongroup coverage to BHP

*Public program participation rate calculated as (# with public coverage/public coverage + uninsured)
**For nongroup coverage, "take-up" calculated as (# with nongroup coverage/nongroup + uninsured)

Notes

[1] Sonier J. and P. Holland, *Health Insurance Exchanges – How Economic and Financial Modeling Can Support State Implementation*, State Health Access Data Assistance Center and AcademyHealth, November 2010.
[2] Abraham J., *Predicting the Effects of the Affordable Care Act: A Comparative Analysis of Health Policy Microsimulation Models*, State Health Reform Assistance Network Policy Brief, March 2012.
[3] For children, Medicare coverage is last in the hierarchy.
[4] An HIU is defined as a group of people who would likely be considered a "family unit" in determining eligibility for either private or public health insurance coverage. For more information, see *Defining "Family" for Studies of Health Insurance Coverage*, SHADAC Issue Brief, March 2012.
[5] This figure is of keen interest to states because they will receive higher federal matching funds for Medicaid enrollees who are "newly eligible" – those who would not have been eligible under the state rules that were in place on December 1, 2009.
[6] For example, the income ranges of interest will likely vary by state, depending on current eligibility levels for Medicaid and CHIP. Similarly, some of the default assumptions will vary by state – for example, the impact of the ESI dependent coverage expansion for 19 to 25 year olds will be different in states that had previously enacted their own legislation to extend coverage to this group in segments of the market that are regulated by the state.
[7] Nationally, in the first quarter of 2011 53.2 percent of young adults had private health insurance, compared to 51.0 percent in 2010. (Robin A. Cohen and Michael E. Martinez, "Health Insurance Coverage: Early Release of Estimates from the National Health Interview Survey, January – March 2011," National Center for Health Statistics, September 2011.)
[8] National Conference of State Legislatures, http://www.ncsl.org/default.aspx?tabid=14497#State_Actions.
[9] Agency for Healthcare Research and Quality, Center for Financing, Access and Cost Trends. 2010 Medical Expenditure Panel Survey – Insurance Component.
[10] Congressional Budget Office, "The Patient Protection and Affordable Care Act's Effects on Employers' Decisions to Offer Health Insurance," Paul D. Jacobs presentation to the Eighth World Congress of the International Health Economics Association, July 2011, available at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/123xx/doc12374/07-13-2011-jacobs_ihea-presentation_cbo-analysis-employer-responses.pdf.
[11] We accomplish this by estimating how many more average-sized small employers in the state would be newly offering coverage to reach an increase of 0.5 percent in the number of people covered; we use state-specific data from the MEPS Insurance Component to make these calculations.
[12] Congressional Budget Office, Paul D. Jacobs at the Eighth World Congress of the International Health Economics Association, July 2011.
[13] Christine Eibner et al., "Establishing State Health Insurance Exchanges: Implications for Health Insurance Enrollment, Spending, and Small Businesses," report prepared for the U.S. Department of Labor, 2010.
[14] Jessica Vistnes and Alan C. Monheit, "The Health Insurance Status of Low-Wage Workers: The Role of Workplace Composition and Marital Status," *Medical Care Research and Review*, 2011.
[15] CBO, Paul D. Jacobs presentation to the Eighth World Congress of the International Health Economics Association, July 2011.
[16] Congressional Budget Office, letter to the Honorable Evan Bayh, November 20, 2009, estimating the impacts of health reform on private health insurance premiums.
[17] RAND Corporation, "Analysis of the Patient Protection and Affordable Care Act (H.R. 3590)", Policy Brief, February 2010.
[18] U.S. Department of the Treasury, Department of Labor, and Department of Health and Human Services, "Patient Protection and Affordable Care Act: Preexisting Condition Exclusions, Lifetime and Annual Limits, Rescissions, and Patient Protections," *Federal Register* vol. 75 no. 123, p. 37188-37241, June 28, 2010.
[19] The model assumes a 0.6 percent decline in employer ESI offer for every 1 percent increase in premiums, based on the review of research evidence by Su Liu and Deborah Chollet of Mathematica Policy Research in "Price and Income Elasticity of the Demand for Health Insurance and Health Care Services: A Critical Review of the Literature," Final Report to ASPE/HHS, March 24, 2006.
[20] CBO, Paul D. Jacobs presentation to the Eighth World Congress of the International Health Economics Association, July 2011.
[21] The model assumes a 0.1 percent decline in take-up for every 1 percent increase in premiums, based on the review of research evidence by Su Liu and Deborah Chollet of Mathematica Policy Research in "Price and Income Elasticity of the Demand for Health Insurance and Health Care Services: A Critical Review of the Literature," Final Report to ASPE/HHS, March 24, 2006.
[22] In addition to the reduced take-up of ESI among people who are newly eligible for Medicaid, described earlier.
[23] John Holahan and Irene Headen, "Medicaid Coverage and Spending in Health Reform: National and State-by-State Results for Adults At or Below 133 percent FPL," Kaiser Commission on Medicaid and the Uninsured, May 2010.
[24] A third major source of potential premium change is a change in the composition of the nongroup market, in terms of the age distribution and the health status of people purchasing coverage. This source of change is also included in the model, with no additional user assumptions required.
[25] Estimates of current average actuarial value nationally and increase in use of services associated with reduction in cost sharing are from a December 2008 Congressional Budget Office report, "Key Issues in Analyzing Major Health Insurance Proposals."
[26] Congressional Budget Office, letter to the Honorable Evan Bayh, November 20, 2009 estimating the impacts of health reform on private health insurance premiums.
[27] Su Liu and Deborah Chollet, "Price and Income Elasticity of the Demand for Health Insurance and Health Care Services: A Critical Review of the Literature," Final Report to ASPE/HHS, March 24, 2006.
[28] Massachusetts Health Connector, "Report to the Massachusetts Legislature: Implementation of Health Care Reform, Fiscal Year 2011," November 2011. The subsidized product in the Massachusetts Connector has about 160,000 enrollees, while the unsubsidized product has about 40,000 enrollees.