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Cost of the Future Newly Insured under the Affordable Care Act (ACA)

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I. Executive Summary

Background

In March 2010, the U.S. Congress passed the Patient Protection and Affordable Care Act (ACA), a sweeping piece of legislation designed to overhaul the country's health care system and extend health insurance to millions of uninsured Americans. The law includes numerous provisions that aim to accomplish this goal. One way in which the ACA increases access to commercial health insurance coverage is by restricting insurers from denying coverage, excluding individuals with pre-existing conditions, and varying premiums based on an individual's health status. To minimize the adverse selection that could result from certain provisions, the ACA includes other provisions, such as premium and cost-sharing subsidies administered via a Health Benefits Exchange (HBE) and an individual tax penalty for those who do not purchase sufficiently valuable health insurance coverage. These provisions aim to increase overall participation in health insurance plans. The ACA includes additional provisions to expand health coverage to U.S. residents, such as the option for states to expand Medicaid to nearly all adults below 138 percent of FPL, a requirement for all large employers to offer health insurance to full-time employees or face a penalty, and a tax credit to small employers to offset the cost of insurance and thus incentivize them to offer coverage. [1]

Our baseline estimates indicate that of the 52.4 million individuals who would have been expected to otherwise lack health insurance coverage in the absence of the ACA, 32.4 million will obtain coverage, assuming all ACA provisions were fully implemented and presented in 2014, and assuming all states expand Medicaid.[2] This includes 10.4 million individuals who gain coverage through the individual exchange, 0.4 million individuals who gain private non-group coverage, 2.2 million individuals who gain coverage in a Small Business Health Options Program (SHOP) Exchange, 5.4 million individuals who gain other employer coverage, and 14.0 million individuals who gain coverage through Medicaid expansion, if all states participate, which may not occur. Given that all states will not participate in the Medicaid expansion, state-level estimates comparing number of uninsured under expansion versus no expansion are presented in ***Figure S-1*** and ***Figure S-2***.

Project Scope

The SOA's research objective is to provide guidance to state exchange officials and administrators, federal officials and administrators, and actuaries assisting states and health plans. The goal of the project is to estimate the morbidity and/or cost for newly insured individuals in the individual market (and to some degree, the small group exchange) relative to the morbidity and/or cost for the current commercially insured population. This analysis will primarily focus on the individual, non-group market. In order to plan for the impact that these currently uninsured individuals will have on the health insurance markets, it is important to understand their costs relative to the costs for people already enrolled, for whom many health insurers have experience and data.

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[1] The ACA provides the option for states to expand Medicaid to 133% of FPL and includes a provision to disregard 5% income of a family's income for eligibility determination, which effectively increases eligibility to 138% of FPL.
[2] The 32.4 million estimate is an overestimate, as many states have indicated that they will not participate in Medicaid expansion.

The key research questions explored in this analysis include:

- What is the anticipated enrollment for the currently uninsured under the ACA?
- For the newly insured, what is their relative morbidity and what could reasonably be expected for relative costs, compared to the currently insured?
- What will be the general impact of the newly insured on the overall post-reform health care industry and insurance market, in terms of supply and demand for health care services and insurance carriers?
- How will health care costs for the newly insured differ by state?
- What will be the relative health status and cost for individuals who remain uninsured and how will this vary by state?
- If states expand Medicaid under the ACA, what is the impact on Medicaid costs and enrollment?

Note that the ACA's affect on *premium* is not modeled in this research; rather, *long-term relative claims cost* is modeled. Many aspects of the ACA will affect premiums, including changing benefit designs, new taxes and assessments, federal risk mitigation programs, minimum loss ratio rules, rate review rules, and premium subsidies.

Research Model Used

Our research estimates are made using The Lewin Group Health Benefits Simulation Model (HBSM). The HBSM is a micro-simulation model of the U.S. health care system. HBSM is a fully integrated platform for simulating policies ranging from narrowly defined insurance market regulations to Medicaid coverage expansions and broad-based reforms involving multiple programs such as the ACA. It was developed in 1989 to simulate the wave of reform proposals that culminated in the health reform proposal introduced by President Clinton in 1993. The model was used by the U.S. Bipartisan Commission on Comprehensive Health Care (the Pepper Commission) in 1990 and has been in almost constant use since then by The Lewin Group at the state and national levels. The Lewin Group has been using this model since 2010 to assist clients with ACA planning, strategies and actions. The SOA retained Optum, who chose to use the HBSM model and engage The Lewin Group to conduct this research study. Optum is the parent company of The Lewin Group. Randy Haught and John Ahrens, authors of this report, are employees of Optum. However, the authors' analyses and interpretations are based upon their own professional expertise and are offered within the scope of work they were asked to perform by the SOA. Their findings or conclusions do not necessarily represent a position of Optum or Lewin.

The HBSM is explained in greater detail within the Technical Notes and in Appendix A and B. The reader is encouraged to read and understand the model and assumptions prior to using the model results for analysis.

The HBSM model outputs are based on expected cost results in 2014, but assuming full implementation of the 2016 penalties (when full penalties apply) and also assuming that ultimate enrollment in the various programs and the Exchanges is completed right away. Reality will likely result in a lag in enrollment shifts, such that not all people who are modeled

to ultimately take coverage will do so in immediately in 2014, as presented in this research. Observations from prior Medicaid expansions show that it may take three to four years to reach an ultimate enrollment state. In addition, this research does not reflect that newly insured individuals may have a pent-up demand for services due to previously unmet health care needs, and further does not reflect that the earliest new enrollees may differ from the average risk group that will ultimately enroll. Therefore, each user of this report will need to make their own assumptions for each state with respect to how the initial years' (2014 and 2015) enrollment and distribution of risks may occur, as well as the appropriateness of the model for 2016 and subsequent years. In order to assist the practitioner in modifying the results, Excel worksheets are provided for each state to facilitate the process.

Key Findings

Key findings are summarized in ***Figure S-1*** and ***Figure S-2*** by state. Due to the changing status of participation in the Medicaid expansion for individual states, ***Figure S-1*** shows the percent uninsured, non-group enrollment, and non-group costs pre- and post- ACA for each state assuming that all states expand Medicaid, resulting in many of the uninsured enrolling in Medicaid. ***Figure S-***2 shows these same results for each state, but assumes that none of the states expand Medicaid. The reader can select the appropriate table based on the state's current Medicaid participation status. The three findings summarized below assume Medicaid expansion in all states. Although the costs shown in the tables are at projected 2014 levels, the actual enrollment and percentage increases in costs reflect an "ultimate" or "steady-state" environment, which we assume corresponds to about 2016 or 2017 (after three years of exchanges). Therefore, mitigating strategies being considered in 2013 for 2014 and 2015 (for example, some states are considering transitioning state high risk pools gradually) are not reflected in this model. The research models the long-term likely scenario when high risk pools have been fully transitioned into the market.

Finding 1: After three years of exchanges and insurer restrictions, the percentage of uninsured nationally will decrease from 16.6 percent to between 6.8 and 6.6 percent, compared to pre-ACA projections.

In the first section of ***Figure S-1***, estimates are shown for the percentage of all individuals uninsured in absence of the ACA and compared to two estimates of the percentage of all individuals uninsured in under the ACA, assuming full implementation and presented in 2014 dollars and population counts. Note that the counts are annual equivalents so that an individual who is uninsured for three months would count as 0.25 uninsured. This approach can result in differences with other counts of the uninsured which might be based on a snap shot on a given date, or count someone who is uninsured at any time in a year.

One of the key findings of our analysis is that the impact of the ACA on reducing the number of uninsured will vary substantially across states. Some of the factors that may explain these differences include: proportion of population that is uninsured prior to the ACA; portion of the uninsured below 400 percent of FPL, which is based in part on current Medicaid eligibility levels in the state; and average non-group costs.

To provide a range of results, the percentage of uninsured are simulated under two models: a price "elasticity" model and a "utility" function model. The elasticity model simulates the

decision to take coverage based upon the change in the net cost of coverage to the individual under reform, a decision which varies by demographic characteristics of the individual. The utility function models an amount that someone is willing to pay to be protected against the risk of going without insurance; they choose coverage if the cost is less than that figure.

Finding 2: Under the ACA, the individual non-group market will grow 115 percent, from 11.9 million to 25.6 million lives; 80 percent of that enrollment will be in the Exchanges.

The middle section of ***Figure S-1*** provides estimates for the number of non-group individuals covered pre-ACA compared to the number of those expected to be covered post-ACA; this is shown under the elasticity model. The percentage of non-group individuals in the Exchanges is shown as well. We model that 80 percent of non-group coverage will be through the Exchanges, since subsidies will only be available for coverage purchased through the Exchanges. Our model assumes that people purchasing non-group coverage who are eligible for subsidies will purchase through the Exchanges. Much of the increase in coverage is a result of the premium and benefit subsidies for lower income individuals, many of who will select the "silver" benefit tier since that is the tier for which benefit subsidies are tied.

Finding 3: The non-group cost per member per month will increase 32 percent under ACA, compared to pre-ACA projections.

In the last section of ***Figure S-1***, the average non-group allowed per member per month cost, excluding those in high risk pools (state-run pools that existed pre-ACA and federally funded state pools under ACA), is shown in absence of the ACA; these costs reflect the "underwritten" risk in most states.[3] The percentage increase between pre- and post-ACA estimates is shown as well. The post-ACA figures include the impact of a) high risk pool members, b) employers dropping group coverage, and c) increased morbidity from selection by those currently uninsured who now purchase coverage. The results of this analysis indicate that there will be significant variation across states in the impact of the ACA on average cost in the non-group market. These estimates come from ***Figure 5*** of the state-specific tables. Since the populations before and after ACA may be significantly different, ***Figure 6A*** shows the increase by age bracket. States that show a decrease in average costs under the ACA are primarily those that currently use community rating in the non-group market. The reduction in average costs for these states reflects the younger and healthier individuals that will enroll due to the reduced cost from the premium subsidies.

Our analysis also indicates that while high risk pools generally have few enrollees, the cost per individual is very high. Movement of the high risk pool individuals into the non-group Exchange will generally create a significant increase in cost. However, it can be reasonably argued that proportionately more uninsured individuals will have similar risks in states that had relatively small high risk pools. The reader is encouraged to further examine this issue.

[3] Our analysis assumes that both the State and Federal High Risk Pools will be rolled into the exchanges at some point in time. However, individual states may decide not to transition its state high risk pool enrollees in 2014 and phase this transition in over time. Reader should refer to their individual state's plan. For example, Maryland is planning to transition high risk pool enrollees into the exchange over time.

Figure S-1. Summary of "Ultimate" Findings- Assuming All States Expand Medicaid

State	% Uninsured Pre-ACA	% Uninsured Post-ACA Elasticity	% Uninsured Post-ACA Utility	Size of Non-Group Pre-ACA	Size of Non-Group Post-ACA	% of Non-Group in Exchange	Average Non-Group PMPM Pre-ACA	Average Non-Group PMPM Post-ACA	% Change in Non-Group PMPM
Alabama	14.7%	4.9%	4.2%	117,257	295,633	86.8%	$263	$422	60.3%
Alaska	20.6%	8.5%	8.3%	22,702	62,501	83.8%	$436	$520	19.2%
Arizona	21.1%	12.0%	12.1%	250,488	570,681	81.5%	$290	$355	22.2%
Arkansas	18.1%	6.0%	4.9%	112,882	233,527	82.7%	$238	$335	40.9%
California	18.2%	8.4%	8.1%	1,789,865	3,163,015	72.4%	$260	$420	61.6%
Colorado	18.0%	7.9%	7.5%	293,851	502,554	75.7%	$262	$365	39.1%
Connecticut	12.7%	6.0%	6.0%	126,997	255,216	76.7%	$399	$514	28.8%
Delaware	9.5%	4.9%	4.9%	25,902	56,946	80.8%	$380	$491	29.3%
District of Columbia	12.3%	5.7%	5.5%	25,343	41,271	76.4%	$348	$528	51.9%
Florida	19.6%	8.3%	8.0%	843,935	1,684,727	79.4%	$313	$396	26.5%
Georgia	18.2%	6.9%	6.6%	349,454	762,955	81.6%	$310	$396	27.6%
Hawaii	8.0%	3.8%	3.9%	26,584	73,534	83.8%	$374	$456	21.9%
Idaho	16.6%	5.8%	6.1%	98,954	186,187	77.3%	$211	$343	62.2%
Illinois	13.1%	5.9%	5.6%	471,343	978,648	80.1%	$304	$459	50.8%
Indiana	14.3%	5.2%	4.8%	178,442	463,393	88.0%	$272	$455	67.6%
Iowa	13.2%	4.8%	5.0%	147,357	267,001	77.1%	$350	$384	9.7%
Kansas	16.6%	6.6%	6.3%	151,303	254,839	81.3%	$306	$364	18.9%
Kentucky	16.7%	5.6%	5.3%	143,620	346,334	84.3%	$297	$398	34.1%
Louisiana	15.7%	4.9%	4.6%	166,093	335,015	78.5%	$346	$444	28.6%
Maine	13.9%	5.4%	6.0%	43,870	121,784	84.3%	$468	$487	4.1%
Maryland	13.1%	6.0%	5.8%	184,809	386,491	78.4%	$284	$473	66.6%
Massachusetts	8.5%	4.9%	5.6%	178,053	362,583	75.7%	$519	$453	-12.8%
Michigan	12.2%	4.5%	4.4%	307,935	699,656	86.1%	$321	$404	25.8%
Minnesota	13.2%	4.9%	5.5%	247,752	524,708	82.1%	$356	$424	18.9%
Mississippi	18.2%	5.3%	4.7%	103,368	214,209	86.8%	$291	$417	43.2%
Missouri	17.4%	5.7%	5.2%	226,603	491,027	83.1%	$238	$378	58.8%
Montana	20.6%	7.7%	7.2%	64,363	116,419	84.3%	$331	$397	20.1%
Nebraska	14.3%	5.5%	5.5%	97,872	170,822	81.7%	$342	$448	30.8%
Nevada	20.4%	8.2%	8.6%	99,860	260,813	79.2%	$278	$359	29.2%
New Hampshire	12.2%	4.6%	5.4%	50,189	112,728	78.4%	$339	$464	36.8%
New Jersey	16.9%	7.4%	8.4%	272,731	724,548	76.5%	$481	$474	-1.4%
New Mexico	22.9%	8.8%	8.9%	42,890	173,704	89.6%	$291	$392	34.9%
New York	12.8%	6.0%	6.9%	450,240	1,615,925	84.3%	$619	$533	-13.9%
North Carolina	18.2%	6.6%	6.4%	402,677	855,147	81.7%	$361	$409	13.5%
North Dakota	14.1%	5.9%	6.2%	51,468	74,774	80.6%	$326	$353	8.4%
Ohio	13.3%	5.0%	3.6%	414,914	805,282	80.9%	$223	$403	80.9%
Oklahoma	16.9%	6.3%	5.6%	134,305	290,180	84.1%	$275	$355	29.3%
Oregon	21.0%	7.2%	8.1%	169,412	435,206	82.7%	$335	$383	14.3%
Pennsylvania	11.2%	4.5%	4.0%	488,341	863,565	80.5%	$356	$455	28.0%
Rhode Island	14.9%	6.6%	7.1%	42,842	91,031	79.4%	$587	$548	-6.6%
South Carolina	17.3%	5.9%	5.5%	161,496	367,909	87.9%	$309	$423	36.8%
South Dakota	14.3%	5.3%	5.3%	52,775	85,094	79.9%	$318	$410	29.0%
Tennessee	15.0%	5.7%	4.9%	281,421	532,091	81.7%	$260	$380	46.4%
Texas	27.1%	10.5%	10.2%	888,205	2,448,638	83.4%	$249	$333	33.8%
Utah	15.5%	6.4%	6.3%	163,811	300,123	75.9%	$245	$314	28.4%
Vermont	13.6%	6.7%	7.3%	15,376	56,986	87.8%	$587	$514	-12.5%
Virginia	15.1%	6.4%	6.1%	328,880	628,457	79.6%	$306	$393	28.4%
Washington	15.6%	6.2%	6.6%	344,620	665,284	74.2%	$314	$357	13.7%
West Virginia	15.6%	4.6%	4.0%	33,191	113,534	89.5%	$347	$469	35.3%
Wisconsin	10.4%	4.8%	4.5%	215,407	442,020	85.1%	$258	$464	80.0%
Wyoming	16.4%	6.0%	6.2%	29,076	54,265	82.6%	$434	$571	31.6%
National	**16.6%**	**6.8%**	**6.7%**	**11,931,125**	**25,618,984**	**80.4%**	**$314**	**$413**	**31.5%**

Assumes all ACA provisions are implemented by 2014, even provisions effective later. Results are similar to what would be expected by 2017, but presented in 2014 dollars and counts. Average non-group PMPM includes total expected claims costs for members but excludes other important items that are needed to model premium, including admin, taxes, and subsidies. States with large high risk pools may consider transitioning these enrollees into the exchange over a longer time frame in order to mitigate cost increases.

Figure S-2. Summary of "Ultimate" Findings- Assuming No States Expand Medicaid

State	% Uninsured Pre-ACA	% Uninsured Post-ACA	Size of Non-Group Pre-ACA	Size of Non-Group Post-ACA	% of Non-Group in Exchange	Average Non-Group PMPM Pre-ACA	Average Non-Group PMPM Post-ACA	% Change in Non-Group PMPM
Alabama	14.7%	8.4%	117,257	378,573	89.5%	$263	$416	58.2%
Alaska	20.6%	11.4%	22,702	74,109	86.3%	$436	$497	13.9%
Arizona	21.1%	12.4%	250,488	577,725	81.8%	$290	$367	26.3%
Arkansas	18.1%	10.0%	112,882	295,130	86.2%	$238	$334	40.4%
California	18.2%	11.3%	1,789,865	3,653,808	76.3%	$260	$403	55.2%
Colorado	18.0%	10.6%	293,851	595,460	79.4%	$262	$354	34.8%
Connecticut	12.7%	8.0%	126,997	285,552	79.0%	$399	$491	23.0%
Delaware	9.5%	4.9%	25,902	63,450	82.7%	$380	$484	27.4%
District of Columbia	12.3%	8.6%	25,343	46,803	78.7%	$348	$497	43.1%
Florida	19.6%	11.4%	843,935	2,002,920	83.0%	$313	$382	22.1%
Georgia	18.2%	10.7%	349,454	934,891	85.1%	$310	$383	23.2%
Hawaii	8.0%	4.9%	26,584	83,153	85.5%	$374	$421	12.6%
Idaho	16.6%	8.3%	98,954	224,042	81.1%	$211	$342	61.8%
Illinois	13.1%	8.2%	471,343	1,102,590	82.1%	$304	$447	46.9%
Indiana	14.3%	8.0%	178,442	560,081	89.9%	$272	$452	66.4%
Iowa	13.2%	7.0%	147,357	319,447	80.6%	$350	$369	5.5%
Kansas	16.6%	9.4%	151,303	309,683	84.6%	$306	$353	15.5%
Kentucky	16.7%	9.1%	143,620	431,290	87.5%	$297	$393	32.2%
Louisiana	15.7%	8.7%	166,093	418,914	82.4%	$346	$459	32.7%
Maine	13.9%	7.3%	43,870	137,524	86.0%	$468	$490	4.7%
Maryland	13.1%	8.1%	184,809	440,563	80.9%	$284	$459	61.4%
Massachusetts	8.5%	5.0%	178,053	373,953	76.4%	$519	$478	-8.0%
Michigan	12.2%	6.5%	307,935	854,242	88.4%	$321	$399	24.3%
Minnesota	13.2%	6.9%	247,752	613,391	84.4%	$356	$413	16.1%
Mississippi	18.2%	10.4%	103,368	278,048	89.7%	$291	$419	43.9%
Missouri	17.4%	9.5%	226,603	613,937	86.2%	$238	$370	55.8%
Montana	20.6%	11.0%	64,363	143,119	87.1%	$331	$389	17.8%
Nebraska	14.3%	7.5%	97,872	205,753	84.8%	$342	$430	25.5%
Nevada	20.4%	11.3%	99,860	303,175	82.9%	$278	$346	24.5%
New Hampshire	12.2%	6.2%	50,189	131,811	81.5%	$339	$471	38.8%
New Jersey	16.9%	10.0%	272,731	776,556	78.8%	$481	$492	2.2%
New Mexico	22.9%	12.1%	42,890	214,044	91.9%	$291	$373	28.2%
New York	12.8%	6.2%	450,240	1,708,252	85.2%	$619	$556	-10.1%
North Carolina	18.2%	10.2%	402,677	1,043,777	85.1%	$361	$392	8.7%
North Dakota	14.1%	7.5%	51,468	88,358	83.4%	$326	$353	8.3%
Ohio	13.3%	7.8%	414,914	1,000,301	84.1%	$223	$406	82.1%
Oklahoma	16.9%	9.1%	134,305	358,001	87.0%	$275	$358	30.3%
Oregon	21.0%	11.0%	169,412	522,363	86.1%	$335	$378	12.8%
Pennsylvania	11.2%	6.5%	488,341	1,054,988	83.8%	$356	$443	24.5%
Rhode Island	14.9%	9.0%	42,842	102,090	81.4%	$587	$549	-6.4%
South Carolina	17.3%	9.4%	161,496	455,872	90.0%	$309	$433	39.9%
South Dakota	14.3%	7.5%	52,775	101,767	83.1%	$318	$434	36.6%
Tennessee	15.0%	8.6%	281,421	654,610	85.0%	$260	$372	43.4%
Texas	27.1%	14.9%	888,205	2,975,371	86.9%	$249	$316	26.9%
Utah	15.5%	8.3%	163,811	348,665	79.2%	$245	$302	23.4%
Vermont	13.6%	6.9%	15,376	58,693	88.2%	$587	$546	-7.1%
Virginia	15.1%	8.8%	328,880	738,858	82.7%	$306	$380	24.1%
Washington	15.6%	8.4%	344,620	775,837	78.0%	$314	$351	11.9%
West Virginia	15.6%	8.4%	33,191	145,591	91.6%	$347	$468	35.1%
Wisconsin	10.4%	6.4%	215,407	506,471	86.8%	$258	$463	79.6%
Wyoming	16.4%	8.6%	29,076	66,105	85.6%	$434	$577	32.9%
National	**16.6%**	**9.5%**	**11,931,125**	**30,149,705**	**83.4%**	**$314**	**$405**	**28.9%**

Assumes all ACA provisions are implemented by 2014, even provisions effective later. Results are similar to what would be expected by 2017, but presented in 2014 dollars and counts. Average non-group PMPM includes total expected claims costs for members but excludes other important items that are needed to model premium, including admin, taxes, and subsidies. States with large high risk pools may consider transitioning these enrollees into the exchange over a longer time frame in order to mitigate cost increases.

II. Methodology: Model and Database Overview

In the sections that follow, we provide an overview of our methodology, including discussion of our model and database used in this analysis. We then present our analysis and results for an example state (Wisconsin) for each of the eight questions outlined above.[4]

We have provided technical notes for the report throughout and in the appendices, including model results in excel files for all 50 states plus the District of Columbia that can be found on the SOA website with this report.

HBSM uses the 2002-2005 Medical Expenditure Panel Survey (MEPS) data to provide the underlying distribution of health care utilization and expenditures across individuals by age, sex, income, source of coverage, and employment status.[5] The MEPS contains a sample of households that is representative of the economic, demographic and health sector characteristics of the population. The database is re-weighted to reflect population control totals reported in the pooled 2008-2010 March Current Population Survey (CPS) data for each of the 50 states and the District of Columbia. It is also adjusted to presume 2014 health care utilization and expenditures across the categories as described below.

These weight adjustments are done with an iterative proportional-fitting model, which adjusts the data to match approximately 250 separate classifications of individuals by socioeconomic status, sources of coverage, and job characteristics in the CPS.[6] Iterative proportional fitting is a process where the sample weights for each individual in the sample are repeatedly adjusted in a stepwise fashion until the database simultaneously replicates the distribution of people across each of these variables in the state.[7] This approach is repeated for each state so that in the end, we effectively have 51 state databases that reflect the unique population characteristics of each state on the 250 separate dimensions.

This approach permits us to simultaneously replicate the distribution of individuals across a large number of variables while preserving the underlying distribution of individuals by level of health care utilization and expenditures as reported in MEPS. These data can be "fine- tuned" in the re-weighting process to reflect changes in health service utilization levels (e.g., hospitalizations). This approach implicitly assumes that the distribution of utilization and expenditures within each of the population groups controlled for in this re-weighting processes are the same as reported in the MEPS data. Finally, population counts were projected to 2014 base year using Census Bureau population projections by state, age and sex.

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[4] Wisconsin was chosen as an example for this report because several of the members of the oversight committee were familiar with Wisconsin, making this state a more interesting case study for understanding why the model was producing its results than other states considered for the example. While there are a few states that more closely align with the overall national scenario, one of the key findings of this report is that the ACA's effect on enrollment and cost is expected to vary widely, making even states that align with the national scenario an atypical scenario. Further, we do not represent the national scenario because it is a roll up of many circumstances.

[5] For some applications, we pool the MEPS data for 2002 through 2005 to increase sample size. This is particularly useful in analyzing expenditures for people with high levels of health spending, which typically represents only a small proportion of the database.

[6] To bolster sample size for state level analyses, we have pooled the CPS data for 2008 through 2010. This is important when using the model to develop state-level analyses.

[7] The process used is similar to that used by the Census Bureau to establish final family weights in the March CPS.

We also adjust the health expenditure data reported in the MEPS database for each state to reflect changes in the characteristics of the population in 2014. These data are adjusted to reflect projections of the health spending by type of service and source of payment in the 2014 base year. These spending estimates are based upon state-level health spending data provided by CMS and detailed projections of expenditures for people in Medicare and Medicaid across various eligibility groups. Spending data for the employer market are based on average premiums published in the MEPS Insurance Component data by firm size and state. We also adjust spending for the non-group market using state-by-state premium data obtained from the National Association of Insurance Commissioners' 2010 Supplemental Health Care Exhibit Report trended to 2014.

The result is a database that is representative of the base year population in each state by economic and demographic group, which also provides extensive information on the joint distribution of health expenditures across population groups. See **Appendix A** and **Appendix B** for a description of the model, databases and key assumptions. A more detailed documentation can be found at http://www.lewin.com/publications/publication/413/.

III. Analysis & Results

To best understand the cost of the newly insured and impact on the non-group market under the ACA, we answer a set of six questions. Our analyses for each of these questions are described below and results are presented for an example state (Wisconsin). The same tables are shown on the SOA website for all states, there are no special considerations with respect to Wisconsin, except it was one of several states reviewed closely by the Project Oversight Group. To provide a range of estimates for this analysis, we also provide a set of six scenarios using various assumptions about implementing the Medicaid expansion and the availability of premium subsidies as well as results using two different participation models, a price elasticity based model and a utility function model.

Research Questions

Question 1: What is the anticipated enrollment for the currently uninsured under the ACA?

To estimate the anticipated enrollment for the currently uninsured under the ACA, we model uninsured individual's decision to enroll through the exchanges, Medicaid or newly offered employer plans. The purpose of the participation model is to estimate the shifts in insurance coverage occurring under the ACA, including the number of individuals enrolling in the state health insurance exchanges. This is a complex task requiring detailed analysis of employer and individual responses to programs and incentives created under the ACA. Our approach is to estimate the effect of the features of the ACA that affect the employer decision to either offer or discontinue Employer- Sponsored Insurance (ESI) and whether to offer coverage through the Small Business Health Options (SHOP) exchange if eligible. Once the employer coverage decisions are estimated, our population model estimates individual enrollment into the various coverage options available under ACA, including the expanded Medicaid program, the employer's plan and individual non-group coverage in the exchange, where premium subsidies are available for individuals up to 400 percent of federal poverty level (FPL).

The population model will be used to estimate the number and characteristics of employers and individuals electing to participate in each of the various forms of public and private coverage, in particular the number and characteristics of individuals participating in the Small Business Health Options (SHOP) exchange and the individual exchange. The key characteristics of individuals contained in the model include demographic characteristics, income, employment status, health risk profile, health utilization and health spending experience.

Appendix A and Appendix B describe the key assumptions used to model each of these key decision points for transitions from current coverage to new options under the ACA.

Figure 1 shows transitions in coverage under the ACA for Wisconsin. In each of the analyses, we make the simplifying assumption that all the ACA provisions are fully implemented (2016 provisions) in 2014. The first column of the table shows the number of individuals in the state by source of coverage prior to the ACA. The remaining columns show the transitions in coverage for those individuals due to the options available under the ACA. Here, many individuals previously covered by small employers (2-50) will transition into the employer or individual exchange (31 percent). Many individuals previously enrolled in other non-group coverage will enroll through the individual exchange (42 percent) or Medicaid (10 percent), as a result of Medicaid expansion. Of those previously uninsured, 26 percent will enroll in Medicaid, 19 percent will enroll in the individual exchange, 14 percent will select employer coverage through the exchange or privately, and 40 percent will remain uninsured. In total, about 276,000 individuals, or 4.8 percent of the Wisconsin population, will remain uninsured in 2014, under a fully implemented ACA.

Figure 1: Changes in Sources of Coverage under the ACA for Wisconsin[1/]
(Assumes Medicaid Expansion)

		Transitions in Coverage under the ACA						
Baseline Coverage	**Total**	**Employer Exchange [4/]**	**Individual Exchange**	**Private Employer**	**Private Non-Group**	**Medicare/ TRICARE**	**Medicaid/ CHIP**	**Uninsured**
Employer 2-50	678,829	174,937	37,701	440,492	513	2	19,836	5,348
Employer 51-100	140,608	24,533	6,421	107,757	13	0	1,341	542
Employer 101+	2,350,507	0	55,441	2,249,878	1,039	241	34,018	9,890
High Risk Pool	24,910	473	20,834	1,659	0	0	1,945	0
Other Non-Group	215,407	5,130	92,736	16,008	62,744	0	22,298	16,490
Retiree [2/]	71,767	0	0	60,075	0	0	11,692	0
TRICARE	73,399	0	0	0	0	73,399	0	0
Medicare	710,938	0	0	0	0	710,938	0	0
Dual Eligible	183,423	0	0	0	0	183,423	0	0
Medicaid/CHIP [3/]	738,645	6,098	46,610	14,180	314	41	671,402	0
Uninsured	602,647	23,400	116,403	63,472	1,250	0	154,357	243,764
% of Currently Uninsured		3.9%	19.3%	10.5%	0.2%	0.0%	25.6%	40.4%
Total	**5,791,080**	**234,572**	**376,148**	**2,953,521**	**65,873**	**968,045**	**916,889**	**276,034**

1/Assumes that all ACA provisions are fully implemented. Population by coverage source is presented as average monthly counts in 2014.
2/ Retiree coverage is defined as people with early employer retiree coverage who are not working.

3/ To compare Medicaid enrollment to other sources (e.g., Statehealthfacts) Medicaid, CHIP and Dual eligibles should be added together.
4/ Employer exchange enrollment is modeled assuming all qualifying firms participate in the premium tax credit program in the initial year. However, the credit is available to each employer for only 2 years and participation has been lower than expected.

We assume that some current Medicaid recipients will enroll in their employers plan if newly offered (part-timers newly eligible, for example). Also, in states that currently provide coverage to adults above 138 percent of FPL we assume these states will discontinue that coverage in 2014 when subsidies become available and move these people into the Exchanges. [8] The following table compares the results of our analysis (for the nonelderly only) to the estimates produced by the Congressional Budget Office (CBO).

U.S. Counts	CBO 2018 (in millions) 1/		Lewin 2014 (full phase in) in millions	
Coverage Source	Prior Law Coverage	Change under ACA	Prior Law Coverage	Change under ACA
Medicaid/CHIP	31	16	46	17
Employer	160	-5	157	-2
Non-Group and Other	31	-3	22	-5
Exchange	-	23	-	21
Uninsured	58	-31	52	-31
Total	280	--	276	--

1/ March 2012 Estimate of the Effects of the Affordable Care Act on Health Insurance Coverage. Estimates for 2018 are presented which represents full implementation.

Monthly spending for each group is shown in ***Figure 1A***, below. Here, under the ACA, the largest cost increases are seen in those transitioning from large employer coverage to the individual exchange or the private non-group market, in retirees transitioning to Medicaid/CHIP, and in the uninsured transitioning to private employer or private non-group coverage. Largest decreases in costs are seen in those transitioning from small employer (2-50) coverage to the private non-group market, in those transitioning from mid-sized (51-100) employer coverage to Medicaid/CHIP, and those transitioning from Medicaid to private non-group coverage. The technical notes, provided below, explain differences in costs for people leaving employer coverage for non-group.

[8] States that currently offer coverage to adults above 138% FPL include CT, DC, IL, ME, MN, NJ, NY, RI, TN, VT and WI.

Figure 1A: Average Morbidity (Monthly Costs) under the ACA for Wisconsin (Assumes Medicaid Expansion)

		Transitions in Coverage under the ACA						
Baseline Coverage	Total	Employer Exchange	Individual Exchange	Private Employer	Private Non-Group	Medicare/ TRICARE	Medicaid/ CHIP	Uninsured
Employer 2-50	$476	$537	$559	$433	$151	$25	$527	$160
Employer 51-100	$573	$486	$671	$583	$617	$0	$121	$906
Employer 101+	$567	$0	$1,061	$552	$1,128	$289	$362	$301
High Risk Pool	$1,176	$1,220	$939	$1,808	$0	$0	$2,155	$0
Other Non-Group	$258	$249	$240	$165	$320	$0	$194	$159
Retiree	$187	$0	$0	$182	$0	$0	$1,730	$0
TRICARE	$650	$0	$0	$0	$0	$649	$0	$0
Medicare	$902	$0	$0	$0	$0	$902	$0	$0
Dual Eligible	$1,274	$0	$0	$0	$0	$1,279	$0	$0
Medicaid/CHIP	$393	$468	$391	$331	$41	$533	$407	$0
Uninsured	$154	$320	$317	$556	$2,054	$0	$378	$108
Total	**$542**	**$503**	**$482**	**$526**	**$363**	**$954**	**$418**	**$120**

Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and premium subsidies are not included.

Population Movement

The population movement under the ACA is estimated using various simulation decisions for employers and individuals in the micro-simulation database. HBSM includes a model of the individual insurance market. The model defines the non-group insurance markets to include all people who are not otherwise eligible for coverage under an employer plan, Medicare, Medicaid or TRICARE (i.e., military dependents and retirees). The model simulates premiums for individuals using the rules that prevail in each state. Premiums can be varied by age, gender and health status. This is done by compiling a "rate book" based upon the HBSM health spending data for the state reflecting how costs vary with individual characteristics.

Once the employer coverage option is simulated for employers, we simulate individual take- up of insurance given the options available. We begin by simulating eligibility and enrollment for the Medicaid program. The probability model of enrollment that we use shows a lower rate of enrollment for people with access to employer coverage. We then simulate enrollment in employer health plans for people who have access to employer insurance. Finally, we simulate the decision to take non-group coverage based upon the cost of insurance less the premium subsidy, if eligible.

We do this by using an individual insurance rating model to estimate the premium an individual would pay for a standard benefits package under current rating practices and again under the ACA reform rating rules. [9] We then estimate the premium subsidies an individual

[9] The standard benefit plan is an illustrative "silver" tiered plan covering all acute care services except adult dental

would be eligible to receive under the ACA to determine the net cost of insurance to the individual. In addition, for people subject to the mandate, we treat the amount of the penalty for not having insurance as an increase in the cost of being uninsured which reduces the net cost of insurance to the individual.

We simulate the decision to take coverage based upon the change in the net cost of coverage to the individual under reform using a multivariate analysis of the likelihood of taking coverage given the premium and other demographic characteristics. The multivariate model shows an implicit price elasticity of -3.4, which is similar to other published estimates. The implicit price elasticity varies with the characteristics of the individual. In general, the sensitivity to price declines as age and income increases.

Similarly, we simulate discontinuations of coverage for people who have non-group coverage under current law reflecting increases in premiums due to changes in insurer rating practices. In general, younger and healthier people will see premium increases while older and less healthy people will see reductions in premiums.

Figure 2 shows the distribution of people currently (pre-ACA) uninsured in the state by age, poverty level and self-reported health status. Similar to ***Figure 1***, the remaining columns show the transitions in coverage for the uninsured due to the options available under the ACA. The last column of the table shows percentage of people remaining uninsured under the ACA.

The highest percentage of people remaining uninsured under the ACA will be for those under age 19 (60 percent) since the Medicaid expansion does not affect children, those with incomes at or above 400 percent of FPL (71 percent), and those with excellent self-reported health status (43 percent). [10] This, in part, reflects a level of adverse selection, as these uninsured individuals likely have less perceived risk of illness and thus less perceived need for insurance coverage. Affordable coverage may also be less accessible for those over 400 percent of FPL, as they do not qualify for subsidies in the exchanges.

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and our assumption for cost sharing for this tiered plan. Assumes covered services to be the same across all states.

[10] The MEPS survey asks respondents to rate their own health status and the health status of each family member as excellent, very good, good, fair or poor. This is based on the respondent's perception of their health and not based on the prevalence actual medical conditions.

Figure 2: Changes in Sources of Coverage under the ACA for Currently Uninsured by Age, Income and Self-reported Health for Wisconsin (assumes Medicaid expansion)

		Transitions in Coverage under the ACA						
	Total at Baseline	Employer Exchange	Individual Exchange	Private Employer	Private Non-Group	Medicaid/ CHIP	Remain Uninsured	% Remain Uninsured
Age								
Under 19	76,268	2,392	16,882	4,056	343	7,174	45,420	59.6%
19-24	128,940	5,502	17,423	22,722	15	48,567	34,711	26.9%
25-34	139,767	5,056	24,789	13,032	276	34,173	62,442	44.7%
35-44	104,605	4,712	20,479	8,520	176	23,925	46,792	44.7%
45-54	84,871	2,715	20,190	9,294	266	18,591	33,814	39.8%
55 & over	68,197	3,022	16,640	5,848	174	21,927	20,585	30.2%
Poverty Level								
Below 138% FPL	261,397	8,623	10,871	22,374	415	147,411	71,703	27.4%
138%-199% FPL	81,204	2,490	36,635	8,958	99	5,256	27,765	34.2%
200%-299% FPL	105,067	5,758	41,227	11,932	402	1,131	44,617	42.5%
300%-399% FPL	67,041	3,776	18,771	6,896	249	369	36,980	55.2%
400% FPL and above	87,937	2,753	8,899	13,311	85	190	62,698	71.3%
Self-Reported Health Status								
Excellent	463,762	16,750	88,738	51,777	816	106,536	199,144	42.9%
Good	108,637	5,416	22,813	9,772	206	33,303	37,128	34.2%
Fair	24,637	1,219	3,764	1,678	205	11,535	6,237	25.3%
Poor	5,611	15	1,089	246	23	2,984	1,255	22.4%
Total	**602,647**	**23,400**	**116,403**	**63,472**	**1,250**	**154,357**	**243,764**	**40.4%**

Assumes that all ACA provisions are fully implemented, population counts in 2014

Question 2: What is the newly insured's relative morbidity compared to the currently insured and what could reasonably be expected for relative costs? What will be the newly insured's pent up demand and for which types of services?

To estimate the newly insured's relative morbidity and costs compared to the currently insured, we use the MEPS data in the HBSM model, which report that health services utilization for uninsured individuals are substantially less than that for insured individuals. Physicians' visits per 1,000 individuals are about 1,366 for the uninsured compared with 3,282 for insured individuals under age 65. Also, hospital stays for the insured are more than double that of the uninsured. Part of the difference in utilization rates is due to the fact that the uninsured are on average younger than insured individuals. Consequently, we adjust for this when estimating how utilization would change for this population as they become insured.

We assume that uninsured individuals who become covered under the ACA would use health care services at the same rate reported by currently insured individuals with similar age, sex, income and health status characteristics. This assumption encompasses two important effects. First, the increase in access to primary care for this population would result in savings due to a

reduction in preventable emergency room visits and hospitalizations. Second, there would be a general increase in the use of elective services such as primary care, corrective orthopedic surgery, advanced diagnostic tests, and other care that the uninsured either forego or delay.

Using this methodology, we estimate that health spending among the currently uninsured population would increase as they become insured. That is, savings from improved primary care would be more than offset by increased use of other care, including elective services. Overall, this method results in an estimated increase in utilization of about 100 percent in spending if the uninsured were to become insured.

Figure 3 shows the number of people newly covered under the ACA by age, poverty level and self-reported health status. The table also shows the average monthly costs before and after becoming insured as well as the percent increase in health care spending. Costs in this report include total personal acute care health spending for covered and non-covered services. In total, this newly insured group will cost 112 percent more than they cost prior to gaining coverage.

Figure 3: Number and Cost of Newly Insured by Age, Income and Self-reported Health Status in Wisconsin (assumes Medicaid expansion)

	Number Newly Insured Under ACA	Average Monthly Cost Pre-ACA	Average Monthly Cost Post-ACA	Percent Change in Average Costs
Age				
Under 19	30,848	$101	$183	80.6%
19-24	94,229	$100	$199	97.8%
25-34	77,325	$146	$236	61.8%
35-44	57,813	$226	$400	76.5%
45-54	51,056	$221	$786	254.9%
55 & over	47,612	$380	$730	92.1%
Poverty Level				
Below 138% FPL	189,694	$209	$488	133.2%
138%-199% FPL	53,439	$144	$243	68.7%
200%-299% FPL	60,450	$156	$294	87.9%
300%-399% FPL	30,061	$172	$317	84.7%
400% FPL and above	25,239	$174	$310	78.4%
Self-Reported Health Status				
Excellent	264,617	$112	$278	148.9%
Good	71,509	$299	$575	92.0%
Fair	18,400	$463	$828	78.9%
Poor	4,357	$1,588	$2,475	55.8%
Total	**358,883**	**$185**	**$392**	**111.9%**

Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and premium subsidies are not included.

Pent Up Demand for Services

This analysis does not include an increase in utilization due to pent up demand. Our modeling assumes an ultimate enrollment for all provisions of the ACA in the initial year of the program and does not address enrollment ramp-up issues or utilization for unmet needs of the newly insured.

The research on "pent-up" demand for health care services as individuals become newly insured has shown mixed results. A study of near elderly uninsured who are approaching Medicare eligibility found that pent-up demand exists for physician care, but not for hospital inpatient care. The study estimated that the individuals who were uninsured prior to Medicare enrollment have 30 percent more physician visits during the two years after Medicare enrollment than their previously insured counterparts.[11] Another study of the near-elderly indicate that the increased utilization experienced after age 65 by those who were uninsured prior to Medicare lead to an elevated hazard of diagnosis (relative to the insured) for virtually every chronic condition considered, for both men and women and the magnitudes of these effects are clinically meaningful.[12] A study of children newly enrolled in Medicaid found no evidence of pent-up demand for medical care among newly insured children, when they were compared to children who had been continuously insured.[13] Another study examined the effects of the Oregon Medicaid lottery after approximately one year of insurance coverage. The study presented estimates of the impact of insurance coverage, using the lottery as an instrument for insurance coverage, found no evidence of a larger initial utilization effect, suggesting that such "pent up" demand effects may not in fact be present. However, the longer run impact of health insurance on health care utilization could differ from the one-year effects. [14]

Since the possibility of pent-up demand is an important risk, especially in 2014 and 2015, the information presented in any of the Tables, which do not factor in pent-up demand, can be adjusted by the reader to reflect an assumption for pent-up demand.

Question 3: What will be the general impact of the newly insured on the overall post-reform health care industry and insurance market, in terms of supply and demand for health care services?

To measure the general impact of the newly insured on the overall post-reform health care industry and insurance market, we use the HBSM micro-simulation model to measure the impact that increased utilization of health services for newly insured has on overall health spending. As described above, we assume that uninsured individuals who become newly covered would use health care services at the same rate reported by currently insured

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[11] Li-Wu Chen, Wanqing Zhang, Jane Meza, Roslyn Fraser, MA, "Pent-up Demand: Health Care Use of the Uninsured Near Elderly," Economic Research Initiative on the Uninsured Working Paper Series, July 2004

[12] Schimmel, Jody. "Pent-Up Demand and the Discovery of New Health Conditions after Medicare Enrollment" Paper presented at the annual meeting of the Economics of Population Health: Inaugural Conference of the American Society of Health Economists, TBA, Madison, WI, USA, June 04, 2006

[13] K. Goldsteen, R.L. Goldsteen, "Demand For Medical Services Among Previously Uninsured Children: The Roles of Race and Rurality," South Carolina Rural Health Research Center, Arnold School of Public Health, University of South Carolina, October 2002

[14] Amy Finkelstein et. al., "The Oregon Health Insurance Experiment: Evidence from the First Year ," No. w17190, National Bureau of Economic Research, 2011

individuals with similar characteristics. [15] The information provided below can be used to estimate increased health services demand as a result of the newly insured in a state. Although the table gives increases for the entire state and the relative impacts across the state can vary depending on uninsured rates and provider supply.

Figure 4 shows the total statewide spending by type of service for all insured (Column 2) and uninsured (Column 3) state residents, before accounting for the effects of the ACA. The fourth column shows the estimated increase in spending by the newly insured under the ACA by type of service. The last column presents the percent increase in system-wide spending due to the newly insured as a percent of total state-wide health spending. In this example, the increase in utilization of services by newly insured people will result in a 2.0 percent total increase in state-wide health care spending in Wisconsin under the ACA.

Figure 4: Change in Spending as a Percent of Total Spending by Type of Service in Wisconsin (millions) (assumes Medicaid expansion)

Type of Service	Spending Under Current Law by Insured Population	Spending Under Current Law by Uninsured Population	Increase in Spending Under ACA by Newly Insured	Percent Change in System-Wide Spending
Hospital Inpatient	$12,230.6	$372.3	$352.3	2.8%
Physician	$12,603.9	$386.2	$276.4	2.1%
Dental	$2,464.9	$88.0	$5.1	0.2%
Other Professional	$1,499.7	$50.9	$28.3	1.8%
Prescription Drugs	$5,492.8	$199.6	$78.8	1.4%
Medical Equipment	$489.8	$25.3	$15.5	3.0%
Hospital Outpatient	$6,852.4	$252.7	$107.6	1.5%
Total	**$41,634.1**	**$1,375.0**	**$864.0**	**2.0%**
Population	5,188,433	602,647	358,883	
Spending Per Person	$8,003.7	$2,281.6	$2,432.6	

1/Assumes that all ACA provisions are fully implemented. Spending by type of service in the MEPS data is adjusted to match CMS state health expenditures by type of service trended to 2014.

Question 4: How will premium rates in the non-group market be impacted by the new population mix? How will health care costs be impacted by the presence of the high risk pools under the ACA and how are current costs impacted by current state high risk pools?

For this report, we focused only on the changes in allowable costs. Actual premiums will vary for each insurer based on many factors which are beyond the scope of this report, since each insurer will have different circumstances and strategies with regard to competition. Besides traditional pricing inputs, 2014 will also bring to individual exchanges risk mitigation programs: reinsurance, risk corridors and risk adjustment. Reinsurance and risk corridors are

[15] Our assumption varies from the Congressional Budget Office (CBO) assumption that newly insured individuals will use between 75 and 95 percent as much as people who are currently insured. "Key Issues in Analyzing Major Health Insurance Proposals", December 18, 2008.

temporary programs for the first three years and risk adjustment is designed to be market neutral. Therefore, these considerations are not addressed here, even though they will be a major source of analysis and conjecture as premiums are developed for 2014 through 2016.

In order to model the impact of the high risk pools, we first project enrollment to the end of 2013 and allowed costs for the state high risk pool, if present, and then the new Federal Pre-Condition Insurance Plan (PCIP). Those figures are used to assign high risk pool coverage to a subset of the non-group market.

An important finding is that new individual coverage for those currently with group coverage will have a significant impact on costs in the individual Exchange. Although the number of employers dropping coverage is not high, their impact in the non-group market can be significant (see technical notes below).

Figure 5 shows the impact of the ACA on the non-group market. This analysis shows the current enrollment and costs for the fully insured individual market and the high-risk pools. The high risk pools include both the state high-risk pool and the temporary federal high-risk pools under the ACA. This table presents the dynamics that we estimate will occur under the ACA. The first two lines show the number of individuals in the high-risk pools and the individual market and their average monthly total health care spending.

Line 3 shows the number of individuals and average costs for individuals currently covered in the high-risk pool or the individual market that leave due to the availability of other coverage options under the ACA. Lines 4 through 6 show the number of people who remain in the individual market and their average monthly spending. Lines 7 through 11 show the impact due to people entering the non-group market under the ACA from employers that discontinue coverage, Medicaid adults above 138 percent of FPL that we assume will get moved to the Exchanges and previously uninsured.

The last line shows the number of individuals and the average monthly spending per person in the Wisconsin non-group market under the ACA—about 442,020 and $464 per month, respectively.

Figure 5: Change in Average Costs in the Non-Group Market under ACA in Wisconsin (assumes Medicaid expansion)

	Membership	Average Cost Per Month
1. Current High Risk	**24,910**	**$1,176**
2. Current Other Non-Group	**215,407**	**$258**
3. Leave Non-Group	64,003	$291
Retain Non-Group		
4. In Exchange High Risk	20,834	$939
5. In Exchange Other	92,736	$240
6. Outside Exchange	62,744	$320
Leave Other Coverage to take Non-Group		
7. Employer 2-50	38,214	$554
8. Employer 51-100	6,434	$671
9. Employer 101+	56,480	$1,062
10. Medicaid/CHIP	46,925	$389
11. Uninsured	117,654	$336
Individuals with Non-Group under ACA	**442,020**	**$464**

Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Figure 6 shows the distribution of, and average costs for, individuals currently in the non-group market by age, poverty level and self-reported health status, along with their average monthly spending. For this table, we assume that the non-group market consists of the fully insured individual market and the high-risk pools. The table compares those figures with the distribution and average monthly spending for individuals who we estimate will take non-group coverage under the ACA. Here, in the non-group market, we see the greatest increase in average monthly costs for individuals ages 55 and over (a 68 percent increase), those with incomes at or above 400 percent of FPL (an 83 percent increase), and those with a self-reported health status of "fair" or "poor." In total, the change in average monthly costs for non-group coverage increases by 32 percent under the ACA. The average increase per person is 29 percent but varies by age.

Figure 6: Distribution of Non-Group Coverage Pre- and Post-ACA by age, income and health status in Wisconsin (assumes Medicaid expansion)[1/]

	Non-Group under Current Law			Non-Group under ACA			
	Number	Percent Distribution	Average Monthly Cost	Number	Percent Distribution	Average Monthly Cost	Change in Avg Mo Cost
Age							
Under 19	32,480	13.5%	$171	71,054	16.1%	$189	10.6%
19-24	34,787	14.5%	$190	53,464	12.1%	$186	-2.4%
25-34	39,606	16.5%	$255	81,396	18.4%	$322	26.2%
35-44	31,570	13.1%	$310	76,544	17.3%	$380	22.5%
45-54	42,976	17.9%	$497	79,242	17.9%	$688	38.2%
55 & Over	58,898	24.5%	$533	80,319	18.2%	$896	68.2%
				Average Increase per Person			29.4%
Family Income in Month as a Percent of the Federal Poverty Level (FPL)							
Below 138% FPL	64,587	26.9%	$405	59,563	13.5%	$393	-2.9%
138%-200% FPL	18,798	7.8%	$419	92,955	21.0%	$340	-18.9%
200%-300% FPL	37,122	15.4%	$334	105,406	23.8%	$498	49.1%
300%-400% FPL	37,950	15.8%	$246	70,506	16.0%	$337	37.0%
400% FPL and Over	81,860	34.1%	$355	113,590	25.7%	$649	83.1%
Self-reported Health Status							
Excellent	206,978	86.1%	$281	355,079	80.3%	$310	10.2%
Good	27,069	11.3%	$686	71,065	16.1%	$668	-2.7%
Fair	5,500	2.3%	$906	12,777	2.9%	$2,556	182.0%
Poor	770	0.3%	$3,992	3,099	0.7%	$4,818	20.7%
Total	**240,317**	**100%**	**$353**	**442,020**	**100%**	**$464**	**31.5%**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Figure 6A shows the same metrics as ***Figure 6;*** however this figure excludes the high-risk pool members from the current non-group population. Excluding the high-risk pool results in a significantly greater change in average monthly costs for non-group coverage as compared to ***Figure 6*** (80 percent versus 30 percent). The average increase per person is 68 percent versus 29 percent, and the increase varies significantly by age.

Figure 6A: Distribution of Non-Group Coverage (Excluding High-Risk Pool) Pre- and Post-ACA by age, income and health status in Wisconsin (assumes Medicaid expansion)

	Non-Group under Current Law			Non-Group under ACA			
	Number	Percent Distribution	Average Monthly Cost	Number	Percent Distribution	Average Monthly Cost	Change in Avg Mo Cost
Age							
Under 19	31,952	14.8%	$167	71,054	16.1%	$189	13.0%
19-24	34,197	15.9%	$172	53,464	12.1%	$186	8.3%
25-34	36,993	17.2%	$219	81,396	18.4%	$322	47.1%
35-44	28,983	13.5%	$227	76,544	17.3%	$380	67.5%
45-54	37,487	17.4%	$322	79,242	17.9%	$688	113.8%
55 & Over	45,795	21.3%	$384	80,319	18.2%	$896	133.2%
				Average Increase per Person			68.1%
Family Income in Month as a Percent of the Federal Poverty Level (FPL)							
Below 138% FPL	58,113	27.0%	$239	59,563	13.5%	$393	64.5%
138%-200% FPL	17,201	8.0%	$322	92,955	21.0%	$340	5.8%
200%-300% FPL	33,093	15.4%	$220	105,406	23.8%	$498	126.4%
300%-400% FPL	33,467	15.5%	$207	70,506	16.0%	$337	62.7%
400% FPL and Over	73,532	34.1%	$298	113,590	25.7%	$649	118.1%
Self-reported Health Status							
Excellent	192,143	89.2%	$227	355,079	80.3%	$310	36.2%
Good	19,863	9.2%	$500	71,065	16.1%	$668	33.7%
Fair	3,222	1.5%	$582	12,777	2.9%	$2,556	339.3%
Poor	179	0.1%	$149	3,099	0.7%	$4,818	3128.0%
Total	**215,407**	**100%**	**$258**	**442,020**	**100%**	**$464**	**80.0%**

Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Question 5: What will be the relative health status and cost for people who remain uninsured under the ACA and how will this differ by state?

Figure 7 shows the distribution of uninsured individuals under current law in the state by age, poverty level and self-reported health status along with their average monthly spending. The table compares those estimates with the distribution and average monthly spending for individuals who we estimate will remain uninsured under the ACA.

Figure 7: Distribution of Uninsured Pre- and Post-ACA by Age, Income and Health Status in Wisconsin (assumes Medicaid expansion)[1/]

	Uninsured under Current Law			Remain Uninsured under ACA			
	Number	Percent Distribution	Average Monthly Cost	Number	Percent Distribution	Average Monthly Cost	Change in Avg Mo Cost
Age							
Under 19	76,268	12.7%	$80	45,420	18.6%	$66	-17.8%
19-24	128,940	21.4%	$101	34,711	14.2%	$104	2.7%
25-34	139,767	23.2%	$118	62,442	25.6%	$82	-30.3%
35-44	104,605	17.4%	$174	46,792	19.2%	$108	-37.8%
45-54	84,871	14.1%	$183	33,814	13.9%	$125	-31.8%
55 & Over	68,197	11.3%	$342	20,585	8.4%	$255	-25.4%
				Average Increase per Person			-24.5%
Family Income in Month as a Percent of the Federal Poverty Level (FPL)							
Below 138% FPL	261,397	43.4%	$183	71,703	29.4%	$114	-37.5%
138%-200% FPL	81,204	13.5%	$118	27,765	11.4%	$69	-41.8%
200%-300% FPL	105,067	17.4%	$132	44,617	18.3%	$99	-24.9%
300%-400% FPL	67,041	11.1%	$129	36,980	15.2%	$94	-27.3%
400% FPL and Over	87,937	14.6%	$144	62,698	25.7%	$132	-8.6%
Self-reported Health Status							
Excellent	463,762	77.0%	$103	199,144	81.7%	$91	-11.4%
Good	108,637	18.0%	$253	37,128	15.2%	$164	-35.2%
Fair	24,637	4.1%	$413	6,237	2.6%	$268	-35.1%
Poor	5,611	0.9%	$1,295	1,255	0.5%	$279	-78.5%
Total	**602,647**	**100%**	**$154**	**243,764**	**100%**	**$108**	**-29.9%**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 and should not be confused with premium.

Here, across most all age groups, income levels, and health statuses, we see a decrease in average monthly costs for the uninsured under the ACA, with an average decrease of 30 percent across all groups. This analysis indicates that individuals remaining uninsured under the ACA will be younger, healthier and have higher incomes than the current uninsured population. Those remaining uninsured include undocumented individuals who are not eligible for subsidies, low income families who would not be impacted by the penalty and people with an unaffordable offer of coverage (more than 8 percent of income) who also would not be affected by the penalty.

Question 6: Assuming the state expands Medicaid under the ACA, what is the impact on Medicaid enrollment and costs?

Figure 8 shows the impact of the ACA on the Wisconsin Medicaid program, assuming the state had expanded Medicaid. The first line shows the enrollment and average Medicaid per member per month costs for individuals currently in the Medicaid program (excluding dual

Medicare/Medicaid enrollees). The table compares those figures with the distribution and average monthly Medicaid spending for people who we estimate will be covered by Medicaid under the ACA. The total net change in Medicaid enrollment will be 178,244 more than pre-ACA projected enrollment; newly eligible will cost more, on average, than currently eligible.

Figure 8: Change in Medicaid Enrollment and Costs under the ACA with Medicaid Expansion in Wisconsin[1/]

	Enrollment	Medicaid Costs PMPM
Current Program	738,645	$321
Leave Medicaid for other Coverage		
Children	(10,514)	$147
Parents/Other	(56,729)	$286
Currently Eligible		
Children	6,948	$279
Parents/Other	11,398	$405
Newly Eligible		
Parents/Other	5,928	$336
Non-Custodial Adults	221,213	$410
All Newly Eligible	227,142	$408
Total Net Change	**178,244**	

1/ Assumes that all ACA provisions are fully implemented. Costs include Medicaid paid amounts PMPM presented in 2014 dollars.

Figure 9 shows the distribution of individuals currently in the Medicaid program (excluding dual Medicare/Medicaid enrollees) by age, poverty level and self-reported health status along with their average monthly total spending. The table compares those figures with the distribution and average monthly spending for individuals who we estimate will be covered by Medicaid under the ACA, assuming state participation in the Medicaid expansion. Here, those ages 19 to 24 and 55 and over will experience the most significant percent increases in the number of individuals covered by Medicaid under the ACA with expansion, compared to current law. Those below 138 percent of FPL will experience a notable percent increase in the absolute number of individuals covered by Medicaid, while families with incomes of 138 percent of FPL and above will experience percent decreases in the number of individuals covered by Medicaid as we assume that adults above 138 percent FPL will be moved to the Exchange. Across all age, income, and health status groups, with Medicaid expansion, there will be a 24 percent increase in the number of individuals covered by Medicaid under the ACA, compared to current law projections.

Figure 9: Distribution of Medicaid Enrollees Pre- and Post-ACA by Age, Income and Health Status in Wisconsin (assumes Medicaid expansion)[1/]

	Covered by Medicaid under Current Law			Covered by Medicaid under ACA			Change in Covered
	Number	Percent Distribution	Average Monthly Cost	Number	Percent Distribution	Average Monthly Cost	Number
Age							
Under 19	438,090	59.3%	$184	435,615	47.5%	$189	-0.6%
19-24	61,895	8.4%	$690	142,575	15.5%	$405	130.4%
25-34	82,473	11.2%	$726	106,634	11.6%	$613	29.3%
35-44	77,118	10.4%	$472	88,701	9.7%	$503	15.0%
45-54	46,034	6.2%	$832	64,810	7.1%	$783	40.8%
55 & Over	33,034	4.5%	$976	78,553	8.6%	$1,047	137.8%
Family Income in Month as a Percent of the Federal Poverty Level (FPL)							
Below 138% FPL	490,595	66.4%	$386	717,526	78.3%	$416	46.3%
138%-200% FPL	119,267	16.1%	$285	91,573	10.0%	$262	-23.2%
200%-300% FPL	81,893	11.1%	$590	67,869	7.4%	$637	-17.1%
300%-400% FPL	22,903	3.1%	$345	19,016	2.1%	$389	-17.0%
400% FPL and Over	23,987	3.2%	$445	20,905	2.3%	$481	-12.8%
Self-reported Health Status							
Excellent	569,235	77.1%	$228	700,263	76.4%	$238	23.0%
Good	123,176	16.7%	$591	153,354	16.7%	$649	24.5%
Fair	37,340	5.1%	$1,284	51,173	5.6%	$1,258	37.0%
Poor	8,894	1.2%	$4,443	12,099	1.3%	$4,349	36.0%
Total	**738,645**	**100%**	**$393**	**916,889**	**100%**	**$418**	**24.1%**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014.

Alternate Scenarios & Sensitivity Testing

The included spreadsheets present our state-level analysis of the cost of the newly-insured under the ACA. For each state we generated the following three scenarios using our price elasticity based model:

1. The Lewin Group Baseline ACA Simulation with Medicaid Expansion and Exchange Subsidies between 138-400% FPL;
2. Simulation of ACA without Medicaid Expansion but Exchange Subsidies between 100-400% FPL; and
3. Simulation of the ACA without the availability of premium subsidies in the Exchanges, but includes the Medicaid Expansion;

Using a utility model, which is described in Appendix A (page A-16), we generated three additional scenarios:

1. Baseline Utility Simulation with Medicaid Expansion and Exchange Subsidies between 138-400% FPL – using a utility model ;
2. Simulation with Medicaid Expansion and Exchange Subsidies between 138-400% FPL – using a utility model with one-third less risk aversion; and
3. Simulation with Medicaid Expansion and Exchange Subsidies between 138-400% FPL – using a utility model with two-thirds less risk aversion.

As described in ***Appendix A***, our approach is to adapt an existing model of consumer aversion to risk called the "utility" function, which has been widely used to estimate coverage under health reform. The model assigns a utility "score" to being insured equal to an individual's expected health spending less the premium, the consumer's valuation of protection from unexpected health care costs, and the value of health services consumed. For each individual, a utility score is computed separately for each of the benefits packages offered in the exchanges. From the lowest actuarial value of coverage to the highest, these will be "catastrophic," followed by bronze, silver, gold, and platinum.

We also compute a utility score for being uninsured that included an individual's average expected out-of-pocket health spending if uninsured less other costs of being uninsured, including the penalty and an implied valuation of the cost of the risk the individual faced when uninsured. We adjust health care costs for individuals to match spending levels reported by uninsured people with similar characteristics, so the costs reflect the lost utility of reduced access to health care.

People are assumed to take coverage if the utility score for any of the five benefits packages exceeds the utility score for being uninsured. Others are assumed to go without insurance. As discussed in the Appendix, the model allows for the possibility that individuals respond to a premium increase by moving to a less comprehensive health plan rather than dropping coverage.

The utility function uses the statistical variance in expected spending to represent the risk an individual faces by going without insurance. The model estimates the cost of this risk to the individual based on estimates of consumer risk aversion drawn from the literature (based on the Arrow-Pratt risk aversion theory). This could be thought of as the amount that someone is willing to pay to be protected against this risk.

IV. Limitations and Caveats

The results of our analysis are projections, not predictions, and they are dependent upon the set of assumptions used. The results are likely to vary under a different set of assumptions. Future experience will not exactly conform to these projected results. We have conducted sensitivity testing of our results to changes in assumptions. However, given that we are modeling a complex system, changes in some assumptions can produce significant changes in results, due to the interrelationships of factors influencing the results.

We have relied on various sources for data and information upon which the underlying assumptions have been developed. In some cases, there has not been adequate experience data upon which to develop assumptions, and we have had to rely on judgment.

The analyses are based upon our understanding and interpretation of the ACA and its related regulations. Regulations provided after October, 2012 have not been modeled, so a review of Appendices A and B is recommended so the reader can confirm any subsequent changes against the model used for the results in this report. States will be allowed some flexibility in varying certain aspects of the ACA, which may impact results differently than what has been presented. Users of this report will need to make some assumptions as to how developments in each state might affect how actual results will play out.

We suggest readers carefully consider possible variations in outcomes and the actions of competitors and regulators when using this report. We suggest that actual per member per month figures generally should not be used, but instead focus on the change in figures between different risk classes. Readers will need to make important assumptions regarding possible pent-up demand in 2014 and 2015 and initial enrollment forecasts for the first two to three years will also have to be assumed and may be subject to wide variation based on assumptions for each state. How states with current high risk pools address transition to the post-ACA market will also have an important impact on results in the initial years, and adjustments should be made to report figures since the report figures assume an "ultimate" impact (generally after approximately three years).

It is advised that readers not to take any action solely with reliance on this report. Any of the results presented could prove to be different for any one state or health plan.

V. Technical Notes

The technical notes below provide additional insights into some of the analyses results discussed above.

Leaving Employer Coverage for Non-Group Coverage

We model individuals moving from employer coverage to non-group coverage under the ACA. ***Figure 10*** shows the impact of the ACA on the non-group market in Wisconsin. Lines 7 through 9 of the table show the number of individuals and average cost for those entering the non-group market under the ACA that previously had employer coverage. The average cost for this group is substantially higher than average cost for other groups and is one of the primary reasons our simulations show a large increase in average costs in the non-group market from current law to the ACA.

Figure 10: Change in Average Costs in the Non-Group Market under ACA in Wisconsin

	Membership	Average Cost Per Month
1. Current High Risk	**24,910**	**$1,176**
2. Current Other Non-Group	**215,407**	**$258**
3. Leave Non-Group	64,003	$291
Retain Non-Group		
4. In Exchange High Risk	20,834	$939
5. In Exchange Other	92,736	$240
6. Outside Exchange	62,744	$320
Leave Other Coverage to take Non-Group		
7. Employer 2-9	38,214	$554
8. Employer 51-100	6,434	$671
9. Employer 101+	56,480	$1,062
10. Medicaid/CHIP	46,925	$389
11. Uninsured	117,654	$336
Individuals with Non-Group under ACA	**442,020**	**$464**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Our analysis of average costs for all workers and dependents in Wisconsin shows that costs are substantially higher than for people purchasing non-group coverage under current law. The average monthly cost for people in the non-group market was $258 (excluding the high risk pool enrollees) compared to $548 for people with employer coverage.

Figure 11 shows the number of members and average monthly cost by size of group pre-ACA. Even if people with average risk in the employer group market moved to non-group they would tend to increase the average cost in the non-group market.

Figure 11: Average Costs in the Employer Market pre-ACA in Wisconsin

Group Size	Members	Avg Cost
2-9	281,346	$491
10-50	397,483	$466
51-100	127,836	$593
101-499	473,333	$551
500-999	219,230	$532
1000-4999	299,043	$501
5000+	756,235	$569
Government	615,440	$615
Total	**3,169,944**	**$548**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Some employers who now offer insurance will decide to discontinue that coverage under the ACA. This will occur among employers seeing an increase in premiums under the Act. We also expect some insuring employers to discontinue coverage in cases where their workers can obtain subsidized coverage through the exchange at a lower cost. These employer decisions are modeled in two steps:

- Employers dropping coverage due to increase in the net cost of coverage; and
- Employers dropping coverage in response to subsidies for individual coverage.

Employers Dropping Coverage due to Increase in the Net Cost of Coverage
In this step we assess the impact of changes in the cost of insurance to the employer on the number of employers offering coverage. Employer health insurance premiums will be affected by changes in rating practices under the Act. In general, small fully-insured employers with younger and healthier workforces will see premiums increase while employers with older and less healthy individuals will see premiums reduced. In addition, the small employer tax credit will reduce premium costs for some firms.

We use HBSM to estimate the change in net premium costs for employers under the Act. We also estimate the penalty for not offering coverage, which we treat as an increase in the cost of not offering coverage, which has the effect of reducing the net cost of obtaining insurance.

We model the decision to offer coverage using a multivariate model of how changes in premiums affect the likelihood of offering coverage. The implicit price elasticity varies from -0.87 for small firms to less than -0.20 for larger firms. This means that a one percent reduction in premiums results in a 0.87 percent increase in the number of small firms offering coverage.

Employers Dropping Coverage in Response to Subsidies for Individual Coverage
Some employers may discontinue coverage under health reform because their workers become eligible for free or subsidized coverage in the exchange. Because these subsidies are available

only to people without access to employer coverage, the employer must discontinue its plan for the workers to get these subsidies.

We model this by:

- Estimating the number of insuring employers where workers can obtain coverage at a lower cost in the exchange (reflecting any change in premium resulting from community rating); and
- Estimating the percentage of these firms that discontinue coverage.

We model the employer decision to discontinue coverage based upon a multivariate model of how changes in the price of alternative health coverage affect the likelihood of switching to the alternative source of coverage. The plan switching elasticity is -2.54, which means that a one percent lower cost results in 2.54 percent of employers discontinuing coverage so workers can obtain subsidize coverage in the exchange.

We model the employer cost as the total premium cost (employee and employer share) less small employer tax credit if eligible less tax benefit of employer coverage. We model the cost for employees in the non-group market as the non-group premium in the Exchange less subsidies plus the cost of the employer penalty, which is assumed to be passed on to workers as lower wages. The results of our simulations show that employers with higher cost members are more likely to discontinue coverage, which would allow their workers to obtain coverage in the Exchanges at adjusted community rates and with the aid of subsidies if they are eligible.

Figure 12 shows that employees and dependents that leave employer coverage due to employers discontinuing coverage and employees leaving employer coverage on their own due to the Medicaid expansion are about 30 percent more costly than the group average member ($712 compared to $548).

Figure 12: Average Costs for Members that Leave Employer Coverage Relative to the Average for all with Employer Coverage in Wisconsin

Employer Pre-ACA		
Group Size	**Members**	**Avg Cost**
2-9	281,346	$491
10-50	397,483	$466
51-100	127,836	$593
101-499	473,333	$551
500-999	219,230	$532
1000-4999	299,043	$501
5000+	756,235	$569
Government	615,440	$615
Total	**3,169,944**	**$548**

All Who Leave Employer under ACA		
Group Size	**Members**	**Avg Cost**
2-9	27,363	$747
10-50	36,035	$489
51-100	8,318	$621
101-499	29,996	$631
500-999	16,694	$781
1000-4999	18,374	$536
5000+	11,312	$587
Government	24,012	$1,282
Total	**172,103**	**$712**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Figure 13 shows the number of workers and dependents that we simulate to leave employer coverage and the programs that they would enroll into. Primarily, those below 138% of FPL will enroll in the Medicaid expansion. The average costs for this group is low relative to the average cost of all members that leave employer coverage since most are low-income, young adults. For the remainder of those that leave employer coverage, we perform a second simulation to determine who decides to purchase non-group coverage. For each individual/family, we estimate the cost of insurance under prior law and again under the ACA. These costs reflect:

- Prior law premium includes the amount that the employee paid for employer coverage; and
- Premiums under the ACA include the cost of insurance under community rating less premium subsidies in the exchange.

We estimate the likelihood of taking the coverage based upon the difference in premium before and after the ACA using a premium elasticity averaging about -3.4. This means that on average a one percent reduction in premium corresponds to a 3.4 percent increase in the number of people taking coverage.

The effect of the mandate is simulated on the basis of the penalty the individual/family would pay under the act if they remain uninsured. We treat the penalty as an increase in the cost of remaining uninsured, which has the effect of reducing the net new cost of taking coverage under the act.

The second two blocks of ***Figure 13*** shows that higher cost workers and dependents that lost employer coverage are more likely to select into non-group and those that are lower cost will opt to go uninsured due to the adjusted community rated premiums in the non-group market. Thus, our simulations show that this "double selection" effect results in relative high cost employees and dependents entering in the non-group market under the ACA.

Figure 13: Average Costs for Members that Leave Employer Coverage and How They Sort Into Programs under the ACA in Wisconsin

Move from Employer to Medicaid			Move from Employer to Non-Group			Move from Employer to Uninsured		
Group Size	Members	Avg Cost	Group Size	Members	Avg Cost	Group Size	Members	Avg Cost
2-9	12,220	$1,028	2-9	14,345	$542	2-9	798	$120
10-50	7,616	$360	10-50	23,870	$591	10-50	4,549	$167
51-100	1,341	$144	51-100	6,434	$696	51-100	542	$906
101-499	8,209	$346	101-499	17,724	$864	101-499	4,064	$192
500-999	3,448	$187	500-999	10,535	$1,030	500-999	2,711	$571
1000-4999	4,537	$608	1000-4999	12,809	$536	1000-4999	1,027	$224
5000+	8,981	$626	5000+	2,219	$446	5000+	112	$230
Government	8,844	$425	Government	13,193	$2,018	Government	1,975	$199
Total	**55,195**	**$564**	**Total**	**101,129**	**$860**	**Total**	**15,779**	**$274**

1/ Assumes that all ACA provisions are fully implemented. Costs include total expected health care spending PMPM in 2014 but should not be confused with premium, since important items such as administrative costs, taxes, and risk mitigation programs are not included.

Provider Payment Levels

The HBSM model adjusts payment levels for individuals simulated to move from Medicaid to commercial insurance and from commercial insurance to Medicaid. This is done using state-level Medicaid physician fees relative to Medicare (KFF StateHealthFacts), national Medicare physician fees relative to commercial insurance (MedPAC) and hospital payment to cost ratios for Medicaid relative to commercial insurance (The Lewin Group estimates).

However, health care for the uninsured is currently paid for by a variety of sources including out-of-pocket, free from hospitals and clinics, other indigent care programs and funding sources, Worker's Compensation, and other private sources such as automobile insurance. Provider payment levels may vary for all these different sources and there is no standard approach for determining how each of these payment levels compares to payment levels by Medicaid or commercial insurance. Therefore, we do not attempt to modify payment levels for the newly insured in the HBSM model but show the potential increase in their health care utilization as they become insured and the associated spending for that increased utilization.

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The authors would also like to thank the actuaries and researchers who provided over twenty seven pages of comments on our draft report. The comments and observations could be broken down into three main categories. The first category was requests for clarification of terms used and what was being described. Wherever possible, we have added additional clarification throughout the report to address those comments. The second category included professional edits, often around semantics, and to be more precise. For example, our reference to "current law" as meaning approaches in effect prior to 2014, even though ACA is actually "current law." However, the main provisions addressed in this report just haven't been implemented yet. Rather than re-doing labels in hundreds of tables, we just define what we meant by the terms we used. The third category included concerns and even disagreement with some of the assumptions used in our model and concerns that the results in tables were not always a smooth curve as one would expect if building tables. For example, there are costs at some age groupings that are higher than the next highest age grouping, a result seldom seen in actuarial tables. Our approach in displaying model results was to avoid any "editing" of results to make results appear smoother. We have left that to the readers of the report so that they can decide on the level of smoothness and assumptions to be made in so doing. We would expect actuaries to have different assumptions regarding such an important issue that is being modeled. In client situations, we are able to change assumptions based on client input, but for this study, we used our baseline assumptions and have documented them so that the reader is aware. However,

sensitivity testing of key assumptions is outside the scope of the project.

Based on the comments, we offer some general considerations when using this report. First, actual per member per month figures generally should not be used, but instead focus on the change in figures. Readers will need to make important assumptions regarding possible pent-up demand in 2014 and 2015 and initial enrollment forecasts for the first two years will also have to be assumed and may be subject to wide variation based on assumptions for each state. Generally, smoother results are desirable and looking at other "similar" states may provide another input in to so doing. State specific results may be too broad for most analysis, generally, for client work, we provide results at smaller county or groupings of counties level. There will be differences between results from this report and other reports, and the reader should consider some of the likely reasons for that by reading documentation to the extent it is available. Regulations have continued to be produced, whereas the output of the model in this report was frozen as of late September. Therefore, regulations that have come out since, especially those in late November, 2012, are not reflected (though most of those impact premium calculations which are not a major focus of this report). A model must make general assumptions on premium determinations and cannot duplicate all of the nuances of pricing in such a dynamic state. That said, it is our belief that the subsidies will be the most important consideration to take into account.

We hope that this report will help the reader in addressing issues that will be very important in preparing for 2014 and beyond.

Appendix A – Assumptions for Modeling Coverage Changes Under the ACA

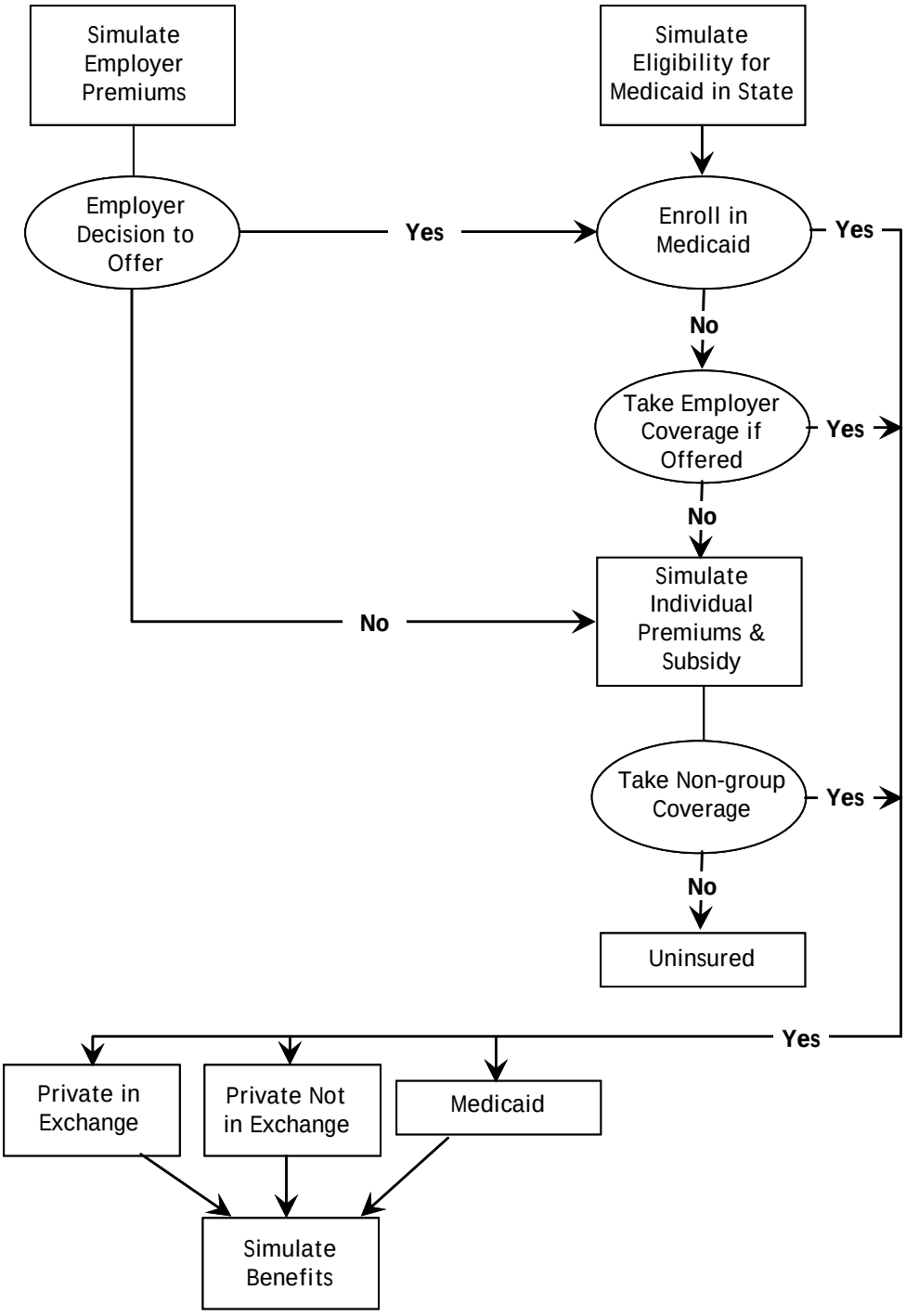
This Appendix describes the data and assumptions used to model each of these key decision points. These analyses were developed using The Lewin Group Health Benefits Simulation Model (HBSM), which is a micro-simulation model of the U.S. healthcare system, designed to provide estimates at the national, state and county levels. The model has been developed over a period of 22 years to estimate the impacts of major changes in the health care system such as the recently enacted Patient Protection and Affordable Care Act (ACA). The model provides estimates of changes in coverage and health spending for the federal government, states, private employers, consumers and providers.

The key to the model is a representative sample of households reporting sources of health insurance coverage, income, employment status, family relationship, demographic characteristics and health spending by source of payment and type of service. The basic data sources are the Medical Expenditure Panel Survey (MEPS) conducted by the Agency for Healthcare Research and Quality and the Current Population Survey (CPS) conducted by the Bureau of the Census. The model also incorporates the American Community Survey (ACS) which is a large household survey that makes it possible to provide estimates at the county and sub-county levels (for large counties only).

Figure A-1 presents a flow chart showing each key decision point in the model. A central element of the analysis is modeling the premiums for the coverage available to individuals and the amount of the subsidies and penalties they face in deciding whether to take coverage. A key element of the process is a detailed simulation of premiums in the individual and small group markets under the premium setting and underwriting practices that apply in each state. Thus the outcome of the employer decisions affects the choices available to individuals.

The following sections describe the baseline data and assumptions used to model changes in coverage and costs under the ACA. A more detailed documentation of the HBSM model can be found at http://www.lewin.com/publications/publication/413/.

Figure A-1: HBSM Simulation Flowchart for modeling ACA



A. Development of Baseline Data

HBSM operates on a database of households that are matched to a database of synthetic employers. The model is based upon the pooled Medical Expenditures Panel Survey (MEPS) data for 2002 through 2005. These data provide information on sources of coverage and health expenditures for a representative sample of the population. These data were adjusted to reflect the population and coverage levels reported in the 2008-2010 Current Population Survey (CPS) data. We pooled three years of CPS data in order to increase the sample size at the state level.

We chose the MEPS data because it is the only data source that provides both the detailed income and coverage detail we need together with detailed information on health conditions, health service utilization and spending. These data have enabled us to develop a model that simulates premiums endogenously, including risk selection effects. It also enables us to model policies affecting "uninsurable" populations and simulate the effects of benefits design.

We develop a sample of employers based upon two employer surveys. We statistically match the 2006 KFF survey of employers with the 1997 RWJF Survey of employers. The KFF data provide information on health plan characteristics, while we rely upon the RWJF data to provide information on the demographic characteristics of people working within each employer. Workers in the household data are statistically matched to an employer in the employer database so that we have detailed information on each worker's employer and health plan if present.

Household Data

The HBSM baseline data are derived from a sample of households that is representative of the economic, demographic and health sector characteristics of the population. HBSM uses the 2002-2005 MEPS data to provide the underlying distribution of health care utilization and expenditures across individuals by age, sex, income, source of coverage, and employment status. We then re-weighted this database to reflect population control totals reported in the 2008-2010 March CPS data.

We make adjustments to the CPS to account for the under-reporting of Medicaid coverage and use these data to estimate the number of uninsured for the entire year, as designed by the CPS. The count of uninsured all year in the MEPS data is adjusted to match the CPS estimate. The result of the methodology produces an average monthly count of uninsured in our model of 52.4 million nationally in 2014, which is similar to the CBO estimate of the average monthly number of uninsured. However, estimates of uninsured at the state-level will appear higher than other sources, which are based on the CPS definition of full year uninsured.

These weight adjustments are done with an iterative proportional-fitting model, which adjusts the data to match approximately 250 separate classifications of individuals by socioeconomic status, sources of coverage, and job characteristics in the CPS. Iterative proportional fitting is a process where the sample weights for each individual in the sample are repeatedly adjusted in a stepwise fashion until the database simultaneously replicates the distribution of people across each of these variables in each state. The population weights are then projected to 2014 using U.S. Census Bureau population projections to account for population changes by age and sex for each state between 2010 and 2014.

Once the MEPS data are re-weighted for population and coverage, we adjust the health expenditure data reported in the MEPS database for each state. These data are adjusted to reflect projections of the health spending by type of service and source of payment in the base year (i.e., 2014). These spending estimates are based upon state-level health spending data provided by CMS and detailed projections of expenditures for people in Medicare and Medicaid across various eligibility groups. Spending data for the employer market are based on average premiums published in the MEPS Insurance Component data by firm size and state. We also adjust spending for the non-group market using state-by-state premium data obtained from the National Association of Insurance Commissioners' 2010 Supplemental Health Care Exhibit Report and projected cost for people in current state and temporary federal high-risk pools.

The result is a database that is representative of the base year population in each state by economic and demographic group, which also provides extensive information on the joint distribution of health expenditures across population groups.

Employer Database

The model includes a database of employers for use in simulating policies that affect employer decisions to offer health insurance. We use the 2006 survey of employers conducted by the KFF. These data include about 3,000 randomly selected public and private employers with 3 or more workers, which provide information on whether they sponsor coverage, and the premiums and coverage characteristics of the plans that insuring employers offer. However, because the KFF data do not include information on the characteristics of their workforce, we match the KFF data to the 1997 RWJF survey of employers, based upon firm characteristics and the decile ranking of the actuarial value of health plans in each database given coverage and cost-sharing features of each plan.

While dated, the RWJF data provide a unique array of information on the demographic and economic profile of their workforce. Thus, we rely upon the KFF data for information on health benefits, but rely upon the RWJF data for the distribution of each employer's workforce by full-time/part-time status, age, gender, coverage status (eligible enrolled, eligible not enrolled and ineligible), policy type (i.e., single/family); and wage level. However, these data do not provide detailed information on worker health status and health spending required to simulate the effect of policies affecting group insurance rating practices and other behavioral responses.

To be able to simulate these aspects of reform, we develop a "synthetic" database of firms that, includes detailed health status and spending information for each worker and dependent in the firm. The first step is to statistically match each MEPS worker, which we call the "primary worker", with one of the employer health plans in the 2006 KFF/RWJF data. We then populate that firm by randomly assigning other workers drawn from the MEPS file with characteristics similar to those reported for the KFF/RWJF database.

For example, a firm assigned to a given MEPS worker that has 5 employees would be populated by that worker plus another four MEPS workers chosen at random who also fit the employer's worker profile. If this individual is in a firm with 1,000 workers, he/she is assigned to a Kaiser/HRET employer of that size and the firm is populated with that individual plus another 999 MEPS workers. This process is repeated for each worker in the HBSM data to produce one unique synthetic firm for each MEPS worker (about 63,000 synthetic firms). Synthetic firms are

created for all workers including those who do not sponsor health insurance, and workers who do not take the coverage offered through work.

Thus, if a firm reports that it employs mostly low-wage female workers, the firm tended to be matched to low-wage female workers in the MEPS data. This approach helps assure that RWJF/Kaiser/HRET firms are matched to workers with health expenditure patterns that are generally consistent with the premiums reported by the firm. This feature is crucial to simulating the effects of employer coverage decisions that impact the health spending profiles of workers going into various insurance pools.

Month-by-Month Simulation

HBSM simulates coverage on a month-by-month basis. This is necessary because economic conditions and coverage vary over the course of the year. These changes can lead to changes in eligibility for public programs and can greatly affect the cost of proposals to expand coverage. Moreover, eligibility for Medicaid and SCHIP is determined on a monthly income basis. Failure to account for these transitions over the course of the year can lead to errors in estimating program impacts by omitting periods of part-year eligibility.

The household database used in HBSM is organized into 12 separate months. The MEPS data identify sources of insurance coverage by month for each individual in the survey. Thus, for example, an individual could be uninsured for five months and covered under Medicaid for the next seven months. These data also include information on employment status at certain times of the year which can be used to approximate the months in which each person is employed, particularly for people reporting employer coverage (which is reported by month). Earnings income, which is reported on an annual basis, is allocated across these months of employment. The individual health events data provided in MEPS also enables us to identify health services utilization in each month, which is important in allocating health spending to months of coverage by source.

B. State-level Simulation of Insurance Markets

One of the most important features of the ACA is its sweeping reforms of insurance and premium rating practices. HBSM includes models of insurance markets in each state. The model simulates the widely varying rating methodologies used within each state for the non-group market and employer groups.

Group Rating Practices

We model premiums for each synthetic firm in the insurance markets based upon the small group rating rules in each state and reported health expenditures for the workers assigned to each plan. This includes community rating, age rating, and rating bands. Experience rating based upon reported health expenditures for the workers assigned to each firm is also used for fully insured plans where permitted (usually for mid-sized firms). We also estimate premiums for self-funded plans based upon the health services utilization for people assigned to each firm.

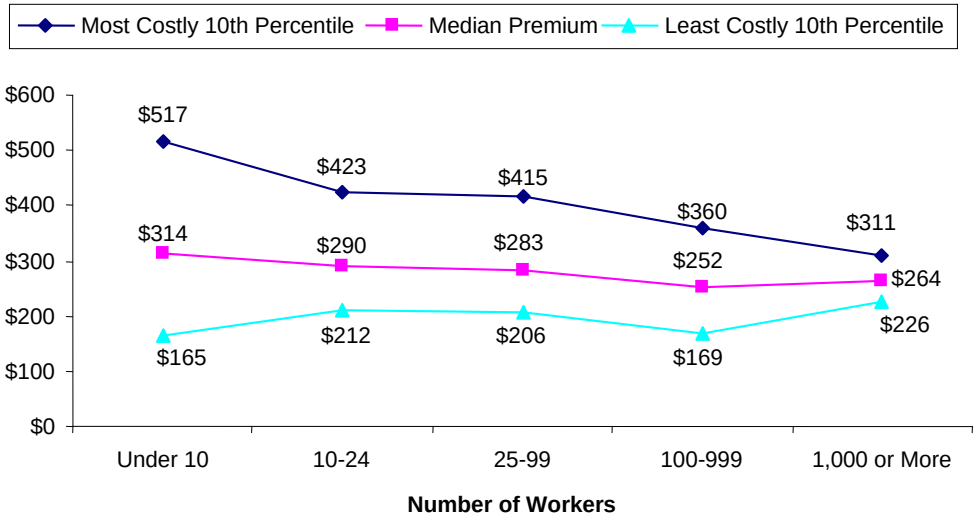
We simulate these rating practices by developing a "rating book" for each state based upon the rating factors allowed in each state. In many states, premiums may vary widely by age, industry, gender and health status. This information is available for each worker and dependent

assigned to each of the firms in the database. Health status rating is simulated by identifying individuals in the file with chronic conditions and high expected costs, given their reported level of utilization in the prior year. We developed separate rating books for each state that limits rate variation by age or health status.

States typically define the small group market as firms with 50 or fewer workers. We simulate premiums for larger fully insured firms based upon estimates of expected costs based on reported spending in the prior year. For self-funded plans, premiums are assumed to equal per-worker costs by family type. In addition, we simulate premiums for all employers, including those that do not offer coverage, so we can simulate uptake of coverage as premiums are changed due to reform.

Figure A-2 illustrates that the variability in PMPM premium costs varies widely across employers by size of group. For example, among firms with fewer than 10 workers, PMPM premiums range from about $460 for firms in the 10 percent most costly firms compared with average costs of $157 for firms in the 10 percent least costly firms. By comparison, PMPM premiums in firms with 1,000 or more workers vary from $372 for the 10 percent most costly groups to $215 for the least costly 10 percent of firms. Assuring this range of variability is preserved in the data is essential to modeling reforms that can have large effects for small numbers of firms.

Figure A-2: Estimated Average Health Insurance Costs (PMPM) for Most Costly and Least Costly 10 Percent of Employer Groups in 2006: Includes Benefits and Administration [a/]



a/ Estimates for a standard benefits package.
Source: The Lewin Group estimates using the Health Benefits Simulation Model (HBSM).

Because these premiums are estimated for a uniform benefits package, it is necessary to perform a final adjustment to reflect the actual provisions of the plan offered by individual employers. We do this by estimating the actuarial value of each plan using the coverage and cost sharing data reported in the KFF employer data. We then adjust the premium estimated for the plan by the ratio of the actuarial value of the employer's plan and the actuarial value of the standard benefits package used in the analysis.

Individual Insurance Market Simulation Model

HBSM also includes a model of the individual insurance market. The model defines the non-group insurance markets to include all people who are not otherwise eligible for coverage under an employer plan, Medicare, Medicaid or TRICARE (i.e., military dependents and retirees). The model simulates premiums for individuals using the rules that prevail in each state. Premiums can be varied by age, gender and health status. This is done by compiling a "rate book" based upon the HBSM health spending data for the state reflecting how costs vary with individual characteristics.

We simulate health status rating in the individual market in states where this is permitted. In these states, the premiums that individuals pay reflect the claims experience of the group or some other indication of worker health status. We simulated these premiums using a "tiered rating" process that classifies people into several risk levels based upon expected health spending based upon prior year health expenditures.

In most states, insurers are permitted to deny coverage to people with health conditions. Thirty-three states have a high risk pool available to those who cannot obtain coverage due to their health condition. We simulate this by selecting a portion of the population reporting in MEPS that they had a chronic health condition and are also covered under a non-group plan. The conditions we used to identify "uninsurable" individuals are based upon the condition lists used in several states to identify people as eligible for the high risk pool. We also identify uninsurable people among the uninsured.

C. State-level Model of Medicaid and CHIP

The Model simulates a wide variety of changes in Medicaid and the Children's Health Insurance Programs (CHIP) eligibility levels for children, parents, two-parent families, and childless adults. The model simulates certification period rules, deprivation standards (i.e., hours worked limit for two-parent families), "deeming" of income from people outside the immediate family unit and other refinements in eligibility. As under the program, the model simulates eligibility on a month-by-month basis to estimate part-year eligibility.

HBSM estimates the number of people eligible for the current Medicaid program and various eligibility expansions using the actual income eligibility rules used in each state for Medicaid and SCHIP. The model simulates enrollment among newly eligible people based upon estimates of the percentage of people who are eligible for the current program who actually enroll. In addition, it simulates the lags in enrollment during the early years of the program as newly eligible groups learn of their eligibility and enroll.

1. Simulating Medicaid Eligibility and Enrollment

Because the MEPS data do not report the state of residence, Medicaid simulations in HBSM begin with the CPS data. We simulate the number of people eligible for expansions in coverage using the 2008-2010 CPS data. The CPS includes the detailed data required to simulate eligibility for the program including income by source, employment, family characteristics and state of residence. These results are integrated into the MEPS data in HBSM in a later step described below.

It is necessary to allocate reported income across months to perform month-by-month simulations. We do this by allocating reported weeks of employment across the 52 weeks of the year according to the number of jobs reported for the year. Reported weeks of unemployment and non-participation in the labor force are also allocated over the year. We then: distribute wages across the weeks employed; unemployment compensation over weeks unemployed; workers compensation income over weeks not in labor force. Other sources of income are allocated across all 12 months of the year.

Using these data, we can estimate the number of program filing units (single individuals and related families living together) who meet the income eligibility requirements under the current program in their state of residence. The model also simulates the number of people who would be eligible under proposed increases in income eligibility. In particular, the model can estimate the number of non-custodial adults who are eligible under expansions affecting these groups.

Eligibility for the Medicaid expansion is restricted to legal U.S. residents that have been resident in the US for at least five years. However, undocumented immigrants are not eligible for the Medicaid expansion. Legal immigrants that have been in the country for five or less years are ineligible for the Medicaid expansion. To model this requirement, we impute undocumented status and length of time living in the U.S. for people in our HBSM model using citizenship and length of time living in the U.S. as reported in the CPS, which is then controlled to national estimates by the Pew Hispanic Center. [16] Since the CPS data is state specific, it provides the information necessary to estimate the number of undocumented and legal immigrants living in the U.S. for five or fewer years at the state level.

Once estimated, we incorporate our Medicaid expansion estimates into the MEPS based household data for each state. We do this by simulating eligibility in the adjusted state-specific MEPS data based on monthly income, age and family type. New eligibility and enrollment is calibrated to replicate the CPS based estimate.

2. Individual Decision to Enroll in Medicaid and CHIP

We simulated the decision for newly eligible people to enroll in the Medicaid expansion based upon a multivariate model of enrollment in the existing program which reflects differences in enrollment by age, income, employment status, and demographic characteristics. The simulation results in average enrollment of about 75 percent of newly eligible uninsured people and 39 percent for newly eligible people who have access to employer health insurance. HBSM simulates eligibility on a month-by-month basis to capture part-year eligibility for the program.

We assume that currently eligible but not enrolled children will be enrolled as a newly eligible parent becomes covered under Medicaid. Also, we assume that eligible families will enroll in instances where the parent loses employer coverage because their employer decides to discontinue their health plan (discussed above). We also simulated a small increase in enrollment due to the penalty for Medicaid eligible people with income high enough to be required to pay taxes (people with incomes below the income tax filing threshold ineligible under the Act).

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[16] Gretchen Livingston, "Hispanics, Health Insurance and Health Care Access", September 2009.

We assume that in states that currently provide coverage to adults above 138 percent of FPL will discontinue that coverage in 2014 when subsidies become available and move these people into the exchanges. [17] We assume that CHIP is continued and states do not move children above 138 percent of FPL into the exchanges but continue the CHIP program.

Based upon these analyses, our estimated take-up rates average 25 to 74 percent, as shown in ***Figure A-3***:

Figure A-3: Individual Decision to Take Medicaid

	HBSM Estimate
Newly eligible without access to employer coverage:	74%
Newly Eligible with access to employer coverage:	39%
Currently eligible and uninsured who enroll:	25%

D. Individual Decision to Take Private Non-Group Coverage

For people not eligible for Medicaid, we model the decision for uninsured individuals to take non-groups coverage based upon a multivariate model of how changes in the price of insurance affect the likelihood of taking coverage. In addition, we model the decision for insured individuals to discontinue their coverage in cases where their premium increases using the same multivariate model.

Eligibility for premium subsidies is restricted to legal U.S. residents regardless of the length of time they have resided in the country. However, undocumented immigrants are not eligible for premium subsidies within the Exchanges. Legal immigrants that have been in the country for five or less years are ineligible for the Medicaid expansion but would be eligible for premium subsidies if their income is below 400 percent of FPL. To model this requirement, we impute undocumented status and length of time living in the U.S. for people in our HBSM model using citizenship and length of time living in the U.S. as reported in the CPS, which is then controlled to national estimates by the Pew Hispanic Center. Since the CPS data is state specific, it provides the information necessary to estimate the number of undocumented and legal immigrants living in the U.S. for five or fewer years at the state level.

1. Decision for Uninsured to Take Non-Group Coverage

For each individual/family, we estimate the cost of insurance under prior law and again under the act. These premiums reflect:

1. Prior law premium includes the cost of insurance for the individual in the individual market under the rating rules that apply in their state of residence;

[17] States that currently offer coverage to adults above 138% FPL include CT, DC, IL, ME, MN, NJ, NY, RI, TN, VT and WI.

2. Premiums under the act include the cost of insurance under community rating less premium subsidies in the exchange; and
3. The effect of the tax exclusion for health benefits on the after tax cost of coverage.

We estimate the likelihood of taking the coverage based upon the difference in premium before and after the act using a premium elasticity averaging about -3.4. This means that on average a one percent reduction in premium corresponds to a 3.4 percent increase in the number of people taking coverage.

The effect of the mandate is simulated on the basis of the penalty the individual/family would pay under the act if they remain uninsured. We treat the penalty as an increase in the cost of remaining uninsured, which has the effect of reducing the net new cost of taking coverage under the act.

Figure A-4 presents HBSM estimates of the percentage of uninsured people taking individual coverage by expected claims costs and family income:

Figure A-4: Uninsured Individual Decision to Take Private Coverage (with subsidy and penalty effect)

Expected Claims Costs	Family Income Level			
	Under $25,000	$25,000-$50,000	$50,000-$75,000	$75,000 or more
	HBSM Estimate	HBSM Estimate	HBSM Estimate	HBSM Estimate
$0 to $1,000	76%	39%	27%	19%
$1,000 to $10,000	93%	68%	49%	16%
$10,000 or more	94%	86%	58%	51%
Uninsurable Diagnosis	91%	79%	58%	37%

1/ Many survey respondents in the MEPS data that we identify as having an uninsurable condition have expected spending less than $10,000 per year.

2. People with Non-Group Insurance who Discontinue Coverage

We also simulate discontinuations of coverage for people experiencing an increase in their Non-group premium. The model calculates the premium for covered people as described above, which reflects changes in premiums due to rating changes, premium subsidies and the penalty they would pay (penalties are treated as a reduction in the cost of being uninsured which reduces the net cost of obtaining coverage).

For those facing a net increase in premium costs we simulate the likelihood of discontinuing coverage using the multivariate model described above (Average price elasticity of -.3.4). HBSM estimates of people discontinuing non-group coverage are shown in ***Figure A-5*** by percent change in premium and expected health spending.

Figure A-5: Percentage of People with Non-Group Insurance who Discontinue Coverage

Percent Change Premium	Expected Claims Costs			
	$0 to $1,000	$1,000 to $10,000	$10,000 or more	Uninsurable
	HBSM Estimate	HBSM Estimate	HBSM Estimate	HBSM Estimate
50% or more	65%	49%	0	0
25% to 50%	38%	16%	0	0
10% to 25%	10%	6%	0	0
-10% to 10%	1%	0	0	0
-10% to -25%	0	0	0	0
-25% to -50%	0	0	0	0
-50% or more	0	0	0	0

n/a – Assumes people with reductions in price do not discontinue coverage.

3. *Individual Decision to Purchase Coverage through the Exchange*

We use a series of assumptions to estimate the number of people taking non-group coverage who will be enrolled in the exchange. These assumptions include:

1. Anyone taking individual coverage that is eligible for premium subsidies will purchase coverage in the exchange. This is because subsidies are available only for people participating in the exchange.
2. People currently purchasing non-group coverage who are not eligible for subsidies will remain with their current plan outside the exchange.
3. All uninsured people not eligible for subsidies that take individual coverage will take coverage through the exchange.

Using these assumptions, the percentage of people taking coverage in the exchange is zero to 100 percent, as shown in ***Figure A-6***:

Figure A-6: Individual Decision to Purchase Coverage through the Exchange

	Lewin Assumption
People qualifying for premium subsidies:	100%
People who now have non-group coverage but do not qualify for subsidies:	0%
People who are uninsured and deciding to take non-group coverage but do not qualify for subsidies:	100%

E. Individual Decision to Take-up Existing Employer Coverage

Using the MEPS and Bureau of the Census data, we estimate that there are up to six million uninsured people who have been offered health insurance from an employer but have declined

the coverage. These include uninsured workers and any uninsured spouses and children who could have been covered as dependents. This also include uninsured dependent children whose parent has taken coverage for his/her self but has not elected the family coverage option. These people are likely to have declined coverage because they have difficult affording the required premium contribution.

In response to the mandate, many of these workers are expected to take the coverage offered by their employer to avoid paying the penalty. We simulate the decision to take coverage using the multivariate model of the decision to take coverage given the change in the price of coverage under the Act. As discussed above, this model yields an overall average price elasticity of -3.4, although this varies with the characteristics of the individual.

The price of coverage to the worker is defined to be the share of the employer premium paid by the worker under reform compared with the employer premium the worker would pay under current policy. This allows us to model the effect of changes in premiums resulting from health insurance rating reforms in smaller firms. In addition, we count the amount of the penalty they would pay for remaining uninsured under the Act (unless exempt from the mandate) as an increase in the cost of being uninsured which has the effect of reducing the net cost to the individual of taking the employer's plan.

Figure A-7 presents HBSM estimates of the percentage of uninsured workers taking employer coverage by change in premium and size of employer:

Figure A-7: Uninsured Workers Who Have Declined Employer Coverage under Current Law Who Take That Coverage as a Result of the Mandate

Rate Change (Includes Premium Changes and Subsidies)	Group Size	
	Under 200	200 or more [a/]
	HBSM Estimate	HBSM Estimate
50% or more	5%	0%
25% to 50%	13%	0%
10% to 25%	1%	0%
-10% to 10%	36%	26%
-10% to -25%	16% [b/]	0%
-25% to -50%	27% [b/]	0%
-50% or more	NA	0%

a/ Under the Act, firms with 200 or more workers are required to use automatic enrollment.
b/ sample size may be too small to provide reliable results.

F. Employer Decision to Start Offering Coverage

We model the employer decision to provide coverage based upon multivariate models of how changes in the price of insurance affect the likelihood of offering coverage. We model the employer decision to offer coverage in the following two steps:

- Based on change in net cost of coverage; and

- Based on changes in worker demand for coverage.

1. Changes in Net Cost of Coverage to Employer

The likelihood of offering coverage is dependent upon several factors including the price for insurance. The ACA will change the price of insurance to employers in three ways:

1. New small employer tax credits;
2. Changes in premium due to community rating in firms with higher cost workers; and
3. A New Penalty for employers who do not offer insurance.

HBSM estimates the change in premiums for each employer for coverage under the law. We do this by simulating the premiums each employer will face under current practices and under the insurance rating rules under the Act. In general, younger and healthier people will pay more for coverage while older and less health people will pay less. We also reflect the amount of the small employer tax credit they would qualify for to estimate net premium costs. We Model the effect of the penalty for not offering coverage as an increase in the cost of being uninsured, which reduces the net cost of providing coverage.

We model the decision to offer coverage using is a multivariate model of how changes in premiums affect the likelihood of offering coverage. The price elasticity varies from -0.87 for small firms to less than -0.20 for large firms. This means that a one percent reduction in premiums results in a 0.87 percent increase in the number of small firms offering coverage.

Figure A-8 presents HBSM estimates of the percentage of employers who decide to offer coverage due to price changes (including subsidy and penalty effects) by the percentage change in premiums (including subsidy effects) and group size.

Figure A-8: Employers Who Decide to Offer Coverage Due to Price Changes by Change in Premiums and Group Size

Rate Change (Includes Premium Changes and Subsidies)	Group Size		
	2 to 50	50-100	100 or more
	HBSM Estimate	HBSM Estimate	HBSM Estimate
50% or more	0%	0%	n/a
25% to 50%	0%	0%	n/a
10% to 25%	0%	4%	n/a
-10% to 10%	3%	17%	59%
-10% to -25%	14%	26%	n/a
-25% to -50%	25%	58%	n/a
-50% or more	38%	0%	n/a

N/A – No firms in Cell under ACA.

2. Changes in Worker Demand for Coverage

The requirement for people to have insurance coverage will increase the demand for employer sponsored insurance. Uninsured workers who now face a penalty for not having coverage will want to obtain that coverage at the lowest possible price, which will often be employer insurance. Employer coverage is generally less costly to administer because of the economies of

scale in selling and administering coverage for a group. Premium payments for employer health benefits are also tax exempt, which increases the value of employer insurance to the individual as compared with individual coverage.

The model simulates the decision for employers to start offering coverage as a result of the individual penalty for being without coverage. As discussed above, we treat the individual penalty as an increase in the cost of going without insurance that effectively reduces the net cost of taking coverage for the group. We use this as an estimate of the economic benefit to individuals in the group if the employer were to offer coverage.

We model the employer decision based upon the multivariate model of the likelihood of taking coverage as the price of insurance changes as described above. This model shows an average price elasticity of -0.34, which means that a one percent reduction in the net cost of insurance results in 0.34 percent of affected employers offering coverage. Firms are assumed to offer coverage only if employer insurance is less costly than non-group coverage with premium subsidies.

In this analysis, the number of people taking coverage is determined on the basis of the change in price attributed to the individual penalty only (the impact of other factors affecting premiums is modeled in other steps described in this document.) Thus, a health reform program with no penalty for being without coverage has no impact on the number of employers offering coverage.

Figure A-9 presents HBSM estimates of the percentage of non-insuring firms that decide to offer coverage due to increased worker demand for coverage, based on these assumptions.

Figure A-9: Employer Decision to Start Offering Coverage Due to Increased Worker Demand for Coverage (worker weighted)

Average Earnings of Workforce	Group Size		
	2 to 50	50-100	100 or more
	HBSM Estimate	HBSM Estimate	HBSM Estimate
Less than $30,000	2.8%	1.2%	5.1%
$30,000- $50,000	7.1%	1.1%	5.3%
$50,000- $75,000	10.4%	5.9%	9.3%
$75,000 or more	16.4%	n/a	23.2%

n/a – due to small sample size we expect immaterial results.

G. Employer Decision to Discontinue Coverage

Some employers who now offer insurance will decide to discontinue that coverage under the ACA. This will occur among employers seeing an increase in premiums under the Act. We also expect some insuring employers to discontinue coverage in cases where their workers can obtain subsidized coverage through the exchange at a lower cost. These employer decisions are modeled in two steps:

- Employers dropping coverage due to increase in the net cost of coverage; and

- Employers dropping coverage in response to subsidies for individual coverage.

1. Employers Dropping Coverage due to Increase in the Net Cost of Coverage

In this step, we assess the impact of changes in the cost of insurance to the employer on the number of employers offering coverage. Employer health insurance premiums will be affected by changes in rating practices under the Act. In general, employers with younger and healthier workforces will see premiums increase while employers with older and less healthy individuals will see premiums reduced. In addition, the small employer tax credit will reduce premium costs for some firms.

We use HBSM to estimate the change in net premium costs for employers under the Act. We also estimate the penalty for not offering coverage, which we treat as an increase in the cost of not offering coverage, which has the effect of reducing the net cost of obtaining insurance.

We model the decision to offer coverage using is a multivariate model of how changes in premiums affect the likelihood of offering coverage. The implicit price elasticity varies from -0.87 for small firms to less than -0.20 for larger firms. This means that a one percent reduction in premiums results in a 0.87 percent increase in the number of small firms offering coverage.

Figure A-10 shows HBSM estimates of the percentage of employers who decide to discontinue coverage due to price changes (including subsidy and penalty effects) by group size and percentage change in premium (including subsidy effects).

Figure A-10: Employer Decision to Discontinue Coverage Due to Changes in Net Premium (worker weighted)

Rate Change (Includes Premium Changes and Subsidies)	Group Size		
	2 to 50	50-100	100 or more
	HBSM Estimate	HBSM Estimate	HBSM Estimate
50% or more	18%	0%	n/a
25% to 50%	21%	11%	n/a
10% to 25%	15%	8%	n/a
-10% to 10%	1%	1%	0%
-10% to -25%	0%	0%	n/a
-25% to -50%	0%	0%	n/a
-50% or more	0%	0%	n/a

N/A – No firms in Cell under ACA.

2. Employers Dropping Coverage in Response to Subsidies for Individual coverage

Some employers may discontinue coverage under health reform because their workers become eligible for free or subsidized coverage in the exchange. Because these subsidies are available only to people without access to employer coverage, the employer must discontinue its plan for the workers to get these subsidies.

We model this by:

1. Estimating the number of insuring employers where workers can obtain coverage at a lower cost in the exchange (reflecting any change in premium resulting from community rating); and
2. Estimating the percentage of these firms that discontinue coverage.

We model the employer decision to discontinue coverage based upon a multivariate model of how changes in the price of alternative health coverage affect the likelihood of switching to the alternative source of coverage. The plan switching elasticity is -2.54, which means that a one percent lower premium results in 2.54 percent of employers discontinuing coverage so workers can obtain subsidize coverage in the exchange.

Figure A-11 presents HBSM estimates of the percentage of employers discontinuing coverage due to the availability of subsidized non-group coverage by average worker earnings and group size.

Figure A-11: Employer Decision to Discontinue Coverage due to Availability of Subsidized Non-group Coverage in the Exchange (worker weighted)

Average Earnings of Workforce	Group Size		
	2 to 50	50-100	100 or more
	HBSM Estimate	HBSM Estimate	HBSM Estimate
Less than $30,000	24%	24%	8%
$30,000- $50,000	6%	1%	4%
$50,000- $75,000	3%	1%	2%
$75,000 or more	1%	0%	1%

H. Employer Decision to Offer Coverage in the Exchange

Some employers are permitted to provide coverage for their workers through the exchange. This means that the employer will pay a premium to the exchange and allow the workers to select one of the plans offered in the exchange. This differs from a scenario where employers simply decide not to offer coverage.

Initially, only firms with 100 or fewer workers are eligible to offer coverage for their workers through the exchange in this way. Under the act, these workers are not eligible for subsidies because the employer is contributing to the cost of their insurance.

We assume that premiums in the exchange are about four percent less costly than premiums for coverage sold outside the exchange because of reduced reliance on insurance agents and brokers, who typically receive a commission on sales. Aside from this, the act requires that insurer premiums outside the exchange must be the same as inside the exchange.

We simulate the shift of employers from their current health plan to coverage offered in the exchange based upon the plan switching elasticity of -2.54 discussed above. This means that a

one percent reduction in premium results in 2.54 percent of employers shifting their coverage to the exchange. We also assume that employers that qualify for the premium tax credits would take coverage in the exchange since these credits will only be available through the exchange.

HBSM estimates of the percentage of employers shifting to the exchange are presented in ***Figure A-12***.

Figure A-12: Employer Decision to Offer Coverage in the Exchange

	HBSM Estimate
Firms with fewer than 50 workers:	45%
Firms with 50 to 100 workers:	4%
Firms with over 100 workers (ineligible	0%

I. Utility Function Model

For this study, we also used a "utility" function to provide sensitivity analyses around our results. The utility function has been used by several researchers to simulate how consumer choice of insurance coverage is affected by both financial factors, uncertainty and consumer aversion to risk.[18,19,20] The utility function provides a "score" measuring the benefit to an individual of taking a given insurance product. The score includes the amount of the premium less expected health care costs, plus a valuation of the value to the consumer of protection from unexpected health care costs based upon the Arrow-Pratt model of absolute risk aversion. This approach has also been used to model take-up of insurance under health reform by Pauly and Herring, and Eibner and Girosi.[21]

For each individual in the model, we calculated the utility score for taking insurance under each of the five benefits packages ($U_{i,j}$). We estimate for each person the expected level of spending based upon their health status and health spending reported in MEPS. For each individual, we estimate expected total spending, expected out-of-pocket spending if insured and the variance in expected health care costs. The methods used to estimate these expected cost values are presented in the following section and are illustrated in ***Figure A-13*** below.

We calculate the utility score separately for each of the five benefits packages that would be available in the exchange (i.e., Bronze, Silver, Gold, Platinum and Catastrophic if eligible) based upon expected spending levels and the cost-sharing provisions of each plan. We also calculate a utility score for being uninsured. People are assumed to select among the six possible coverage

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18 Pauly, M., Herring, B., "Expanding Coverage Via Tax Credits: Trade-offs and Outcomes," *Health Affairs*, 20, no. 1 (2001): 9-26.

19 Pauly MV., and Herring, BJ., "An Efficient Employer Strategy for Dealing with Adverse Selection in Multiple-Plan Offerings: an MSA Example," *Journal of Health Economics*, 19 (2000)

20 See: Pauly, MV., Herring, B., Song D., "Tax Credits, the Distribution of Subsidized Health Insurance Premiums, and the Uninsured," *Forum for Health Economics & Policy*, Vol. 5, no. 5, 2002; and Eibner, C., et al., "Establishing State Health Insurance Exchanges: Implications for Healthy Insurance Enrollment, Spending, and Small Businesses," (report to the Department of Labor), RAND Corporation, 2010.

21 Christine Eibner, et al, "Establishing State Health Insurance Exchanges: Implications for Health insurance, Enrollment, Spending and Small Businesses," RAND, 2010.

states (i.e., five benefits packages or uninsured) based upon whichever coverage state yields the highest utility score given the individual's unique expectation of health spending.

We estimate utility scores for coverage under each of the benefits packages that will be available in the exchange using the following equation.

$$(1_j) \qquad U_{i,j} = -E(OOP_{i,j}) - NPrem_{i,j} - 0.5rVar(OOP_{i,j}) + Uhealth_i$$

Three of these values are imputed to individuals from the data shown above in ***Figure A-13***. These include:

$E(OOP_{i,j})$ is expected out-of-pocket health spending if insured under benefits package $_j$ (column 4, ***Figure A-13***);

$Var(OOP_{i,j})$ is the variance in expected out-of-pocket spending if insured under benefits package $_j$ (column 5, ***Figure A-13***, squared); [22]

$Uhealth_i$ is a measure of the utility of health services consumed, which we assume is equal to the value of total expected health care costs for the individual if insured under all five benefits packages (column 2, ***Figure A-13***);[23] and

$NPrem_{i,j}$ is the net premium defined to be premiums less subsidies that we compute separately for each unique policyholder in the model for each of the five benefits packages.

Where:

i= Individual in the simulation; and

j= Alternative benefits packages.

We assume the coefficient for "r" is the midpoint of various Arrow-Pratt absolute risk aversion coefficients (.00084) published in studies of consumer risk aversion for unexpected health spending used by other authors.[24]

In setting these utility values we include the patient cost-sharing subsidies that would be provided under the Act for income eligible individuals. Under the ACA, the exchange will buy-up an individual's benefits package (with a supplemental premium payment) to increase the actuarial value of the plan to levels shown in ***Figure A-14***. Thus, for example, the utility of the Silver benefits package is greatly enhanced for those who are eligible for subsidies.

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[22] As discussed above, the ACA alters the risk of going without coverage by prohibiting insurers from implementing pre-existing condition exclusions. We model this effect by assuming that the variance in out-of-pocket spending is reduced for people who do not have chronic conditions. The variance is equal to standard deviation squared.

[23] Estimates assume a level of spending consistent with an individual who has health insurance. This measure does not include an estimate of consumer surplus.

[24] See: Friedman, B., "Risk Aversion and Consumer Choice of Health Insurance Option," *Review of Economics and Statistics*, Vol. 56, May 1974; Marquis, MS., and Holmer, MR., "Choice under Uncertainty and the Demand for Health Insurance," The Rand Corporation, N-2516-HHS, 1986; and, Manning, WG., and Marquis, MS., "Health Insurance: The Trade-Off Between Risk Pooling and Moral Hazard," (Report to the National Center for Health Services Research and Health Care Technology Assessment), December 1989.

We then calculate the utility score for going without insurance (U_n) using a similar formula:

$$(2) \qquad U_n = -E(OOP_n) - \text{penalty} - 0.5rVar(OOP_n) + Uhealth_n$$

Here, we estimate spending for people if uninsured using the expected spending data imputed to each policy-holder from ***Figure A-13*** below, reduced by one-third to reflect the lower levels of spending without insurance. This is based upon more conservative CBO estimates of increased spending for the uninsured. The values in the second equation include:[25]

$E(OOP_n)$ is the expected value of out–of-pocket spending without insurance which we assume is equal to total expected health spending if insured (column 2, ***Figure A-13***) reduced by one-third;

$Var(OOP_n)$ is the variance in expected out-of-pocket spending, which for the uninsured is equal to expected total health spending without insurance. We assume this is equal to the variance in expected total spending if insured (column 3, ***Figure A-13*** squared) reduced by one-third;

Penalty is the dollar amount of the penalty an individual or family would pay if they go without insurance; and

$Uhealth_n$ is the expected total amount of spending if uninsured, which we assume to be equal to total spending for the insured (column 2, ***Figure A-13***) reduced by one-third.

For these calculations, we use expected spending amounts for each person, including one for expected spending while insured and a second while uninsured. Thus, the utility function while uninsured reflects the lost utility of reduced health spending due to a lack of coverage. The methods we use to do this are described in the following section.

1. Expected Health Care Costs

The key elements of this analysis are our estimates of expected health spending and the variance in expected health spending for each policy holder in the data. We develop these estimates based upon subsamples of the MEPS data for 2005 through 2007 that provide information on spending for each individual for two consecutive years. These data permit us to estimate average expected health spending at the beginning of the year based upon each individual's reported health spending in the prior year**.** This results in expectations of spending that vary with health status, as approximated by prior year health spending. These data also enable us to estimate expected out-of-pocket costs and the variance in total expected spending used in our utility function (***Figure A-13***).[26]

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[25] We used a list of about 50 health conditions to identify people in the MEPS with a chronic condition based upon the ICD-9 condition codes in these data. This list is based upon the lists of health conditions currently used to determine eligibility for existing high risk pools in Colorado, Tennessee and Texas. Using the MEPS, we estimate that there are about 9.9 million uninsured people who have one or more of the pre-existing conditions that typically result in denial of coverage or a "rating-up" of premiums in these markets.

[26] The model imputes spending in the prior year based upon spending in the survey period for those who do not report spending data for two consecutive years.

Figure A-13: Average Cost Per Person in Two Consecutive Years by Percentile Ranking of First Year Spending at 2011 Spending Levels: Privately Insured Only

Percentile of Year 1 Cost per Person	(2010) Year 1 Total Spending	(2011) Year 2			
		Expected Total Spending	Standard Deviation of Expected Total Spending	Expected Out-of-Pocket	Standard Deviation of Out-of-pocket Spending
10 Percent	$0	$949	$4,685	$206	$858
20 Percent	$95	$1,225	$8,038	$215	$696
30 Percent	$286	$1,498	$6,907	$261	$659
40 Percent	$514	$1,661	$5,223	$389	$1,089
50 Percent	$835	$2,247	$6,001	$446	$889
60 Percent	$1,329	$2,879	$6,425	$591	$1,105
70 Percent	$2,130	$3,618	$7,731	$757	$1,147
80 Percent	$3,594	$4,798	$8,353	$1,027	$1,688
90 Percent	$6,605	$7,076	$13,720	$1,252	$1,707
95 Percent	$11,894	$9,267	$16,070	$1,520	$2,054
97.5 Percent	$19,865	$13,080	$22,933	$1,792	$2,529
98.75 Percent	$30,991	$18,084	$30,983	$2,666	$4,476
100 Percent	$81,910	$39,450	$57,158	$3,158	$6,974
Average	$4,043	$4,105	$12,405	$708	$1,611

a/ Data is based upon the MEPS for 2004-2005, 2005-2006, and 2006–2007. We adjusted these data to correct for an undercount of people with the very highest expenditures, based upon actuarial data for people in commercial health plans.
Source: The Lewin Group Estimates using the Health Benefits Simulation Model (HBSM).

These data reveal the expected "regression to the mean." That is, people with the highest expenses in the first year tend to have lower expenses in the next year, while people with little expense in the first year have higher costs in the following year. For example, an individual receiving heart bypass surgery can be expected to have high health expenditures in that year, but costs in the following year will tend to be lower as they recover. Similarly, people with little or no spending in a given year may become ill and start to make greater use of the system in the second year.

As discussed above, we use expected spending amounts for each person, including one for expected spending while insured and a second while uninsured. We estimate these amounts in the following steps:

- Currently uninsured: For people who were uninsured in the MEPS survey, we used reported spending to estimate spending levels while uninsured. To estimate spending for these people while insured, we adjusted these spending amounts to match health spending reported by insured people with similar demographic and health status characteristics. These estimate costs are then used to estimate what expected spending levels would have been at the beginning of the year as illustrated in ***Figure A-13***.
- Currently Insured: We assumed that health expenses while insured are assumed to be the same as they reported in the MEPS. We estimated spending while uninsured by adjusted these amounts to reflect the lower levels of spending reported by uninsured people with similar characteristics. These estimates of costs were then used to estimate

what expected spending levels would have been at the beginning of the year as illustrated in Figure 13.

2. Alternative Benefits Packages

As discussed above, for each individual, we calculate a utility score for each of the coverage options available through the exchange. These include the Bronze, Silver, Gold, Platinum and Catastrophic package (available for people under age 30 only). The services covered under the Bronze, Silver, Gold and Platinum packages are the same; they differ only in terms of point-of-service cost sharing. These packages are denoted in terms of "actuarial value," where a plan that covers all of these services without patient cost sharing would have an actuarial value of 1.0.

The Bronze benefits package is to have an actuarial value of 0.6, which means that the cost sharing parameter (deductibles and copayments) are set at the level required to on average cover 60 percent of the cost of covered services. The actuarial value increases with each succeeding level of coverage to 0.7 for Silver, 0.8 for Gold, and 0.9 for the Platinum package. In ***Figure A-14***, we present actuarial values of each plan. We assume that the Catastrophic plan, which is available to only people under age 30 or people facing premiums under the Bronze package that exceed 9.5 percent of income, would cover the same services with cost sharing calibrated to an actuarial value of 0.5.

Figure A-14: Example Co-payments Meeting Actuarial Standards under ACA: Illustrative Estimates for 2011 [a/]

	Actuarial Value
Benefit Packages in the Exchange	
Platinum Package	.90
Gold Package	.80
Silver Package	.70
Bronze Package	.60
Bronze Small Employer	.60
Catastrophic	.50
Cost Sharing Subsidy Health Plans	
Less than 150% FPL	.94
150% to 200% FPL	.87
200% to 250% FPL	.73
250% to 400% FPL	.70

a/ The Act also reduces the maximum out-of-of pocket spending limits by income level.

Source: The Lewin Group Estimates using the Health Benefits Simulation Model (HBSM).

3. Accounting for Risk Factors under the ACA

We model the effect of open enrollment and pre-existing condition exclusions based upon their effect on risk to the individual for going uninsured. The challenge in using this function is estimating the perceived risk of going without insurance under the ACA. For elimination of the mandate to cause the premium spiral that many expect, the perceived risk of going without insurance must be low enough that many relatively healthy people feel comfortable going without coverage. But if the perceived risk of going uninsured is high, we should see little coverage loss from lifting the mandate.

The ACA alters the financial risk of going without coverage by prohibiting insurers from imposing pre-existing condition exclusions. If not for the annual open enrollment period, this would permit people to delay taking coverage until they need services without fear of pre-existing condition exclusions. This could ignite the premium spiral that many fear if the mandate is eliminated. However, under the ACA, the individual would not be able to take that coverage for up to 11 months until the annual open enrollment period, which retains for the individual substantial risk for going without insurance.

We assume that people reporting a chronic health condition in the MEPS have high perceived risk of going without coverage which we account for by using 100 percent of the variance in expected health costs as a measure of perceived risk.[27,28] For people who did not report a chronic health condition, we assume that they consider themselves to be at risk for accidents and emergency care if uninsured. Based upon data from the Agency for Healthcare and Quality (AHRQ), about 34 percent of all hospital admissions for the commercially insured population originate in the emergency room.[29] Based on this estimate, we use 34 percent of the variance in total expected health spending as a proxy for perceived risk for these individuals.

4. Simulation of the ACA

We estimate the number of people taking coverage under the ACA as written using the methodology described above. People are assumed to choose the coverage option that yields the highest utility score given their expected health spending and eligibility for subsidies. Thus, an individual is assumed to go uninsured if the utility score for being uninsured is greater than the utility scores for the five health plans. Alternatively, individuals are simulated to take one of the five health plans (four if over age 30) with the highest utility score. Older and sicker people tend to elect plans with higher actuarial values, while younger and healthier people tend to enroll in less comprehensive coverage.

We calibrate the model to reflect estimates of the impact of the ACA on coverage using the probability/elasticity-based methodology described in prior sections. Specifically, we calibrate baseline results under the ACA to replicate the estimates of the number of people remaining uninsured that the model generates using the probability models described above at the national level. However, the demographic and health status distributions of the newly insured vary under the two models. Upon reviewing the simulations, we found that the results were sufficiently similar such that we ultimately calibrated the utility model only for non-subsidy-eligible people who would have had non-group coverage under prior law.

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[27] See: Pauly, MV., Herring, B., Song D., "Tax Credits, the Distribution of Subsidized Health Insurance Premiums, and the Uninsured, " Forum for Health Economics & Policy, Vol. 5, no. 5, 2002; and Eibner, C., et al., "Establishing State Health Insurance Exchanges: Implications for Healthy Insurance Enrollment, Spending, and Small Businesses," (report to the Department of Labor), RAND Corporation, 2010.

[28] We used a list of about 50 health conditions to identify people in the MEPS with a chronic condition based upon the ICD-9 condition codes in these data. This list is based upon the lists of health conditions currently used to determine eligibility for existing high risk pools in Colorado, Tennessee and Texas. Using the MEPS, we estimate that there are about 9.9 million uninsured people who have one or more of the pre-existing conditions that typically result in denial of coverage or a "rating-up" of premiums in these markets.

[29] See: Owens, P., and Elixhauser, A., "Hospital Admissions That Began in the Emergency Department, 2003," Agency for Healthcare Research and Quality, February 2006.

5. Allowing for Downgrades in Coverage

An important aspect of this simulation is that it models both discontinuations of coverage and downgrades in coverage resulting from increases in premiums. We anticipate that eliminating the mandate will increase premiums enough that many people will discontinue coverage. However, for some of these individuals, the utility score for less comprehensive coverage will continue to be greater than the utility of going without insurance, even at the higher premium levels. In our simulations, these individuals are assumed to downgrade their coverage to a less comprehensive plan rather than simply becoming uninsured.

For example, someone simulated to purchase the Silver plan under the ACA may respond to the premium increase by purchasing the Bronze plan. In our simulations, this will happen in cases where the utility score of the Bronze plan for that individual is still greater than the utility score for going uninsured.

Allowing for coverage downgrades has the effect of reducing our estimates of coverage loss due to the elimination of the mandate because some of these individuals will move to a lower-cost health plan rather than actually going uninsured.

6. Sensitivity Analysis

Because utility functions are driven by the assumptions, it is important to test the sensitivity of the estimates to alternative assumptions. There is evidence that a substantial portion of the uninsured see themselves as "risk-averse." Data from the 2007 Health Tracking Household Survey conducted by the Center for Studying Health System Change (HSC) indicate that 49.6 percent of uninsured people with "No Health, Medical Bill or Access Problems" report themselves to be risk-averse.[30] Thus the risk of being uninsured for medical emergencies may motivate many of the uninsured to obtain coverage, particularly if premium subsidies are available. Consequently, we performed sensitivity analysis that incorporates alternative measures of consumer risk and risk aversion.

Some risk-averse individuals may decide to continue purchasing coverage to protect against catastrophic health care costs, even though they expect to spend less than the premium amount. The use of open enrollment periods would heighten this sense of risk. Conversely, many people have little idea of what their expected spending will be in the coming year, since people cannot predict medical emergencies.

In this study, we performed two sensitivity analyses of the utility function to model potential adverse selection into the non-group market. The first assumes that people are one-third less risk-averse (meaning that healthier people are more likely to assume the risk of going uninsured) and a second scenario that assumes people are two-thirds less risk averse. This was done by changing the Arrow-Pratt risk aversion coefficient for "r" in the utility function from 0.00084 to 0.00054 to model one-third less risk aversion and 0.00028 to model two-thirds les risk aversion.

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[30] Cunningham, P., "Who Are the Uninsured Eligible for Premium Subsidies in the Health Insurance Exchanges", The Center for Studying Health System Change, No. 18, December 2010.

J. Estimating Health Spending for Newly Insured

The MEPS data report that health services utilization for uninsured people is substantially less than among insured people. The data show physicians' visits per 1,000 people are about 1,349 for the uninsured compared with 3,283 for insured people. Also, hospital stays for the insured are more than double that of the uninsured. Part of the difference in utilization rates is due to the fact that the uninsured are on average younger than insured people. Consequently, we adjust for this when estimating how utilization would change for this population as they become insured.

We assume that uninsured people who become covered under a coverage expansions proposal would use health care services at the same rate reported by currently insured people with similar age, sex, income and health status characteristics. This assumption encompasses two important effects. First, the increase in access to primary care for this population would result in savings due to a reduction in preventable emergency room visits and hospitalizations. Second, there would be a general increase in the use of elective services such as primary care, corrective orthopedic surgery, advanced diagnostic tests, and other care that the uninsured either forego or delay.

1. Modeling Pent-up Demand for Newly Insured

The research on "pent-up" demand for health care services as people become newly insured has shown mixed results. A study of near elderly uninsured who are approaching Medicare eligibility found that pent-up demand exists for physician care, but not for hospital inpatient care. The study estimated that the people who were uninsured prior to Medicare enrollment have 30 percent more physician visits during the two years after Medicare enrollment than their previously insured counterparts. [31] Another study of the near-elderly indicate that the increased utilization experienced after age 65 by those who were uninsured prior to Medicare lead to an elevated hazard of diagnosis (relative to the insured) for virtually every chronic condition considered, for both men and women and the magnitudes of these effects are clinically meaningful. [32]

However, other study findings have been inconclusive as to the extent of pent-up demand. One study of children newly enrolled in Medicaid found no evidence of pent-up demand for medical care among newly insured children, when they were compared to children who had been continuously insured. [33] Another study examined the effects of the Oregon Medicaid lottery after approximately one year of insurance coverage. The study presented estimates of the impact of insurance coverage, using the lottery as an instrument for insurance coverage,

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[31] Li-Wu Chen, Wanqing Zhang, Jane Meza, Roslyn Fraser, MA, "Pent-up Demand: Health Care Use of the Uninsured Near Elderly", Economic Research Initiative on the Uninsured Working Paper Series, July 2004

[32] Schimmel, Jody. "Pent-Up Demand and the Discovery of New Health Conditions after Medicare Enrollment" Paper presented at the annual meeting of the Economics of Population Health: Inaugural Conference of the American Society of Health Economists, TBA, Madison, WI, USA, Jun 04, 2006

[33] K. Goldsteen, R.L. Goldsteen, "Demand For Medical Services Among Previously Uninsured Children: The Roles of Race and Rurality", South Carolina Rural Health Research Center, Arnold School of Public Health, University of South Carolina, October 2002

found no evidence of a larger initial utilization effect, suggesting that such "pent up" demand effects may not in fact be present. [34]

Our baseline estimates for the effects of the ACA do not include an adjustment for pent-up demand in our HBSM modeling due to the mixed study findings.

[34] Amy Finkelstein et. al., "The Oregon Health Insurance Experiment: Evidence from the First Year **"**,

Appendix B – The HBSM Rate Book Description

The purpose of this document is to present the "rating book" used to simulate premiums for individuals and firms in the individual and small employer markets. For modeling purposes, we compute an individual market premium for all individuals and family units in HBSM (regardless of whether they are currently covered) using the current rating rules in each state. We also compute a premium for each unit using the rating restrictions under the ACA. Both premiums are based on a standard benefits package and are used to model coverage changes due to changes in the price of insurance. Similarly, we estimate premiums for each of our "synthetic groups" in HBSM, which are described below, using the current rating rules in each state and the rating restrictions under the ACA. Our "Methods and Key Assumptions for Modeling Cost of Newly Insured Under the ACA" document describes how these premiums are used to model changes in coverage.

Our "rate book" is actually a series of adjustment factors that are applied to a base rate to determine a premium for an individual or group. Our practice is to estimate a "base rate" for policy holders in each risk pool defined by markets and legislation using HBSM, such as the individual market. Using the spending data provided in HBSM, we estimate separate base rates for single policy holders and family policy holders, which include dependent costs.

These rates are then used to estimate a premium for each policy holder simulated to be in a given risk insurance pool using HBSM. For each policy holder in the pool, we multiply the base rate by a series of adjustments for risk factors included in the rating process, subject to state laws and regulations. The use of rating factors varies by state, primarily due to differences in state laws governing the rating process.

However, the rating factors used may differ by insurer. For example, insurers often have the option to rate by industry and other factors, subject to the laws that apply in the state. In these cases, we use information on the prevalence of the use of individual rating factors in the industry to determine its use in the simulation model.

The rating factors themselves are estimated from the Medical Expenditures Panel Survey (MEPS) data using health spending amounts for all privately insured individuals in the data. These data form the basis of rate setting in the individual and small group markets. Premiums are ultimately adjusted to reflect actual health spending for privately insured people nationally as estimated by the Office of the Actuary of the Centers for Medicare and Medicaid Services (CMS).

In the first section, we present the approach used to simulate rating in the individual market within HBSM. In the second section, we present the methods used to model premiums for firms in the small group market. The third section describes our method for simulating enrollment and costs for individuals in high-risk pools. The final two sections present our approach to simulating premiums in the individual and small group markets under the ACA.

A. Individual Market under Current Law

The model simulates premiums for people in the individual market using the rating factors that apply in their state of residence. The rating factors included age, gender, and an "expected loss

ratio," which we use as a proxy for health status rating information in states where health status may be used in the rating process.

The key steps in the process include:

- Identification of "uninsurable" people;
- Age and gender adjustment;
- Estimation of expected costs;
- Health status adjustment; and
- Special rates for uninsurable people.

1. Identification of Uninsurable Individuals

We use the MEPS data to estimate the number of people with chronic health conditions that would be classified as uninsurable by an insurer. The MEPS data include detailed information for each health condition reported by individuals in the survey. This permits us to identify health conditions using ICD-9 condition codes reported in these data at the three-digit level.

We used a list of about 69 health conditions to identify someone as uninsurable. This list is based upon the lists of health conditions currently used to determine eligibility for existing high risk pools in 19 states. [35] We included conditions that were on eligibility lists in at least 5 states. Using the MEPS, we estimate that there are about 9.9 million uninsured people who have one or more of the pre-existing conditions that typically result in denial of coverage or a "rating-up" of premiums in these markets.

2. Estimation of Expected Costs for Population

In most states, rating in the individual market reflects a certain degree of medical knowledge of the applicant that is generally used to adjust premiums for health status. Insurers can obtain this information based upon health spending in the prior year or through medical underwriting questionnaires for new applicants. In this analysis, we estimate "expected health spending at the beginning of the year for which rates are being determined. This estimate of expected costs is based upon health spending for each individual in the MEPS data.

The MEPS provides spending information for each individual in the survey for over 24 months. This enables us to estimate average spending in a year based upon their spending in the prior year. ***Figure B-1*** presents average spending in the second year based upon their percentile ranking of their spending in the prior year.

[35] States include AK, CO, IA, KY, MD, MN, MT, NE, NC, ND, NH, NM, OK, OR, TN, TX, WA, WV and WY.

Figure B-1: Average Cost Per Person in Two Consecutive Years by Percentile Ranking of First Year Spending at 2010 Spending Levels: Privately Insured Only

Percentile of Year 1 Cost per Person	(2010) Year 1	(2011) Year 2
10 Percent	$0	$749
20 Percent	$134	$865
30 Percent	$337	$1,057
40 Percent	$614	$1,522
50 Percent	$1,023	$1,998
60 Percent	$1,706	$2,920
70 Percent	$2,774	$3,669
80 Percent	$4,777	$4,541
90 Percent	$9,375	$7,121
95 Percent	$15,663	$11,379
97.5 Percent	$25,096	$12,511
98.75 Percent	$38,282	$18,590
100 Percent	$210,600	$31,065
Average	$3,851	$3,940
Median	$995	$910

Source: The Lewin Group Estimates using the Health benefits Simulation Model (HBSM).

These data reveal the expected "regression to the mean." That is, people with the highest expenses in the first year tend to have lower expenses in the next year. For example, an individual receiving heart by-pass surgery can be expected to have high health expenditures in that year. However, costs in the following year will tend to be lower than the prior year as these individuals recover. Similarly, people with little or no spending in a given year may become ill and start to make greater use of the system in the second year.

These data are used to provide a projection of the average expected level of spending for each individual in the coming year based upon their percentile ranking of spending in the prior year. We then convert these data to an "expected loss ratio," which is defined as total expected health spending over the base rate for a given benefits package.

3. State Rating Regulations

We use data compiled by the National Association of Health Underwriters (NAHU) on state regulations for the individual market as the basis for determining rating methods in the model. Based upon these rules, we identify seven types of state rating scenarios that apply, depending upon the rate variation permitted in a state. These include:

- Uninsurable individual in states permitting medical underwriting;
- +/- 50% rating bands;
- +/- 30-35% rating bands;
- +/- 20-30% rating bands;
- Adjusted community rating; and

- Pure community rating.

In states that do not have significant rating restrictions, we assume that individuals are rated on single year of age, gender and expected loss ratio for each individual (***Figure B-2***). In states with rate band limits of 50 percent or more, we assume that rates vary by age and loss ratio subject to a 4:1 limit. Rate bands on age and expected loss ratio of 3:1 are used in state with rating bands of 30 to 50 percent. In states that specify rating bands of less than 30 percent, we assume rate bands on age of 3:1.

Figure B-2: Rate Tables by Type of State Regulation [a/]

	Age Rating	Loss Ratio
1: no rating structure	Single Year	4:1
2: +/- 50% rating bands	4:1	4:1
3: +/- 30-35% rating bands	4:1	3:1
4: +/- 20-25% rating bands	3:1	2:1

a/ Separate approach is used for "uninsurable" people as described below.

For community rates states, the premium is equal to the base rate. In states with adjusted community rating (rate variation by age only), we assume premiums are set according to a 4:1 rating band by age. Health status and expected loss ratios are not used in community rated states.

A separate set of rating rules is used for people deemed to be "uninsurable" because they have pre-existing chronic health conditions. For uninsurable people with high health care costs in the prior year, we use expected health costs as the basis for setting the premium. These rating methods are described below in greater detail. *Figure B-3* presents a summary of the rating rules in the individual market by state.

Figure B-3: State Rating Regulations for the Individual Market

State No	State Name	Rating Limit	High Risk Pool
1	Alabama	1: NRS: no rating structure	1
2	Alaska	1: NRS: no rating structure	1
3	Arizona	1: NRS: no rating structure	0
4	Arkansas	1: NRS: no rating structure	1
5	California	1: NRS: no rating structure	1
6	Colorado	1: NRS: no rating structure	1
7	Connecticut	1: NRS: no rating structure	1
8	Delaware	1: NRS: no rating structure	0
9	Dist of Columbia	1: NRS: no rating structure	0
10	Florida	1: NRS: no rating structure	1
11	Georgia	1: NRS: no rating structure	0
12	Hawaii	1: NRS: no rating structure	0

State No	State Name	Rating Limit	High Risk Pool
13	Idaho	2: +/- 50% rating bands	1
14	Illinois	1: NRS: no rating structure	1
15	Indiana	1: NRS: no rating structure	1
16	Iowa	2: +/- 50% rating bands	1
17	Kansas	1: NRS: no rating structure	1
18	Kentucky	3: +/- 30-35% rating bands	1
19	Louisiana	1: NRS: no rating structure	1
20	Maine	5: ACR: adjusted community rating	0
21	Maryland	1: NRS: no rating structure	1
22	Massachusetts	5: ACR: adjusted community rating	0
23	Michigan	1: NRS: no rating structure	0
24	Minnesota	4: +/- 20-25% rating bands	1
25	Mississippi	1: NRS: no rating structure	1
26	Missouri	1: NRS: no rating structure	1
27	Montana	1: NRS: no rating structure	1
28	Nebraska	1: NRS: no rating structure	1
29	Nevada	2: +/- 50% rating bands	0
30	New Hampshire	4: +/- 20-25% rating bands	1
31	New Jersey	6: C: pure community rating	0
32	New Mexico	1: NRS: no rating structure	1
33	New York	6: C: pure community rating	0
34	North Carolina	1: NRS: no rating structure	1
35	North Dakota	1: NRS: no rating structure	1
36	Ohio	1: NRS: no rating structure	0
37	Oklahoma	1: NRS: no rating structure	1
38	Oregon	5: ACR: adjusted community rating	1
39	Pennsylvania	1: NRS: no rating structure	0
40	Rhode Island	1: NRS: no rating structure	0
41	South Carolina	1: NRS: no rating structure	1
42	South Dakota	3: +/- 30-35% rating bands	1
43	Tennessee	1: NRS: no rating structure	1
44	Texas	1: NRS: no rating structure	1
45	Utah	3: +/- 30-35% rating bands	1
46	Vermont	6: C: pure community rating	0
47	Virginia	1: NRS: no rating structure	0
48	Washington	5: ACR: adjusted community rating	1
49	West Virginia	3: +/- 30-35% rating bands	1
50	Wisconsin	1: NRS: no rating structure	1
51	Wyoming	1: NRS: no rating structure	1

Source: National Association of Health Underwriters (NAHU)

4. Age and Gender Rating Factors

Most states permit rating by age and in many cases gender. However, the degree of premium variation within these rating factors is often limited by state law. Consequently, we develop age rating adjustment by single-year of age and under increasingly more narrow age rating bands from 4:1 to 3:1 and do not include gender rating.

The age adjustments are estimated from the MEPS data for privately insured people. For states with no rating restrictions, we assume that premiums vary with individual year of age and gender (***Figure B-4)***. We use a "smoothing" technique to eliminate spurious variation in rates from one year's age to the next. ***Figure B-5*** presents the age rating factors assuming alternative rating bands apply by age. We simplify this process by creating wider age bands, which has the effect of reducing the variation in adjustment factors.

These adjustments are performed separately for individual policy holders and family policy holders. The model uses a base rate for individuals and a base rate for family coverage, both of which vary with the age of the policyholder only.

Figure B-4: Age Rating by Single-year of Age

Age	Individuals		Family	
	Male	Female	Male	Female
17	0.4869	0.6008	0.4016	1.6568
18	0.4469	0.5868	0.5579	1.5048
19	0.4503	0.6320	0.8402	1.2249
20	0.4303	0.8518	1.0727	0.8905
21	0.4403	0.9057	1.0727	0.7201
22	0.4503	0.9640	1.1487	0.6747
23	0.4476	0.9989	1.0530	0.7020
24	0.4576	1.0664	0.9027	0.7068
25	0.4662	1.3368	0.8242	0.7227
26	0.4762	1.2984	0.8106	0.7676
27	0.5000	1.2995	0.8773	0.7805
28	0.5120	1.2711	0.9247	0.7490
29	0.5243	1.2457	0.9284	0.7200
30	0.5368	1.2937	0.8832	0.8285
31	0.5497	1.3247	0.8832	0.8285
32	0.5629	1.3564	0.8881	0.8530
33	0.5815	1.4013	0.9053	0.8271
34	0.6007	1.4475	0.9153	0.7442
35	0.6225	1.1780	0.9838	0.6967
36	0.6423	1.2155	1.0953	0.6761
37	0.6622	1.2531	1.2067	0.6761
38	0.6887	1.3033	1.2071	0.6868
39	0.7152	1.3534	1.1226	0.7012
40	0.7450	1.2852	1.0025	0.7448
41	0.7748	1.2556	0.9341	0.7900
42	0.8046	1.2260	0.9069	0.8208
43	0.8377	1.2015	0.9033	0.8508
44	0.8741	1.1820	0.9119	0.8656
45	0.9105	1.1092	0.9021	0.8906
46	0.9503	1.1423	0.9208	0.8464
47	0.9900	1.1754	0.9533	0.7726
48	1.0430	1.2085	1.0383	0.6960
49	1.0960	1.2416	1.0771	0.6681
50	1.1522	1.2747	1.0888	0.6642
51	1.2152	1.3112	1.1270	0.6298
52	1.2781	1.3476	1.2501	0.6008
53	1.3476	1.3973	1.4569	0.6252
54	1.4204	1.4469	1.5695	0.7218
55	1.4966	1.4966	1.6303	0.8404
56	1.5794	1.5496	1.5560	0.9069
57	1.6621	1.6059	1.5217	0.9273
58	1.7548	1.6688	1.4037	0.9276
59	1.8542	1.7350	1.3323	0.9605
60	1.9568	1.8045	1.2751	1.1107
61	2.0661	1.8740	1.3481	1.4748
62	2.1820	1.9502	1.5066	2.1395
63	2.2945	2.0197	1.7577	2.9443
64	2.4137	2.0926	2.1359	3.6889
65	2.8144	2.3277	2.6246	4.2686

Figure B-5: Age Rating Factors in States with Rate Bands by Age

	Individual	Family
States with Age Adjustment Limited to 4:1 Rate Band		
< 20	0.5737	1.0426
20-24	0.6646	0.8932
25-29	0.6712	0.8165
30-34	0.8899	0.8566
35-39	0.8856	0.9603
40-44	1.2239	0.8895
45-49	1.5479	0.9085
50-54	1.4842	1.0865
55-59	1.4457	1.3230
60+	2.2627	2.0021
States with Age Adjustment Limited to 3:1 Rate Band		
< 25	0.6355	0.9190
25-34	0.7517	0.8407
35-44	1.0635	0.9234
45-54	1.5191	0.9704
55+	1.9144	1.5726

5. Health Status Adjustment

The final step is to adjust the age and gender rated premium estimated above to reflect the health status of the individual. We use the model to create a "loss ratio" for each individual, that is computed as the ratio of expected costs for an individual over the age and gender rated premium discussed above.

Each premium is then multiplied by an expected loss ratio that adjusts for differences in the expected level of spending for the individual that is not explained by the age adjustment. We did this by applying the age and gender premium for each individual in MEPS and computing the ratio of expected costs to the age and gender adjusted premium, which we have called the loss ratio.

We then tabulate all privately insured people in the MEPS by various groupings of the expected loss ratio to create factors for use in simulating the rating process. To simulate the limits on rate variation in the individual markets, we create separate groupings that have the effect of limiting rate variation to 4:1, 3:1 and 2:1 (***Figure B-6***).

Figure B-6: Rate Variation with Expected Loss Ratio

Loss Ratio: 4:1 Rate Band	
0-50	0.4944
50-75	0.8730
75-100	0.9874
100-125	1.0967
125-150	1.1829
150+	1.8891
Loss Ratio: 3:1 Rate Band	
0-75	0.6447
75-100	0.9874
100-125	1.0967
125+	1.5543
Loss Ratio: 2:1 Rate Band	
0-100	0.7964
100-115	1.0876
115+	1.4344

This enables us to simulate the effect of limitations on rate variation. For example, for a state with a 4:1 rating band, the model uses loss ratio adjustments ranging between 0.4944 and 1.8891. The loss ratio factor varies from 0.6447 to 1.5543 in a state limiting rate variation to 3:1.

6. Special Rates for Uninsured people with Chronic Conditions (Uninsurable)

In this step, we assign a premium to uninsured individuals representing what they would have to pay for coverage given their health status. This amount is computed even for people in states where insurers are permitted to decline coverage to individuals due to health status. These individual are assigned a risk adjustment based upon the amount of their expected spending. Uninsurable people who are in the 90th percentile or more of the general population in terms of prior year spending are assigned a loss ratio adjustment factor that is equal to their computed loss ratio. Because people in the uninsurable group generally have higher costs than others, many of the uninsurable people have spending at or above the 90th percentile (***Figure B-7***).

Figure B-7: Rating for Uninsurable Individual [a/]

Uninsurable People – At or Above the 90th Percentile on prior year Health Spending	
Below 90th percentile	1.8891
95th percentile	2.8881
97.5th percentile	3.1754
98.75th percentile	4.7183
100th percentile	7.8881
Insurable People – Below 90th Percentile on Prior Year Spending by Expected Loss Ratio Group	
0-50	0.4944
50-75	0.8730
75-100	0.9874
100-125	1.0967
125-150	1.1829
150+	1.8891

a/ Uninsurable individuals are defined to be people with one or more chronic conditions that are typically used in states to identify people eligible for a state high-risk pool.

For uninsurable people below the 90th percentile in prior year spending, we adjust the premium based upon a 4:1 rating band based on their expected loss ratio.

B. Small Group Rating under Current Law

We simulate rating practices in the small group market using a "synthetic" firm database. These data are based upon a survey of employers from the Kaiser Family Foundation survey of employers which we have statistically matched to a sample of workers from the MEPS household data that obtain the detailed health spending and demographic data required to simulate the impact of small group rating practices, including the detailed data required on each member of the employer's workforce.

The process used to simulate premiums in the small group market is similar to that used to simulate individual premiums, except that it is at the firm level. We develop a "rate book" methodology that simulates premiums under the methods permitted in each state, including health status rating. This enables us to simulate the changes in premiums that will result from changes in rating practices mandated in health reform.

The methods we use to simulate small group premiums are presented in the following sections:

- Synthetic firm data;
- Expected health spending by firm;
- Insurer rating practices;
- Age and Gender Adjustment;
- Industry and group size adjustments; and
- Loss ratio adjustments.

1. Synthetic Firms

To simulate the impact of reform on employers, we develop a "synthetic" database of firms that, includes detailed health status and spending information for each worker and dependent in the firm, in addition to other firm characteristics information. We begin with a database of employers based upon data from the Kaiser Family Foundation survey of employer in 2006, which includes health plan characteristics data. We then statistically match these data to the Robert Wood Johnson Foundation (RWJF) survey of employers, which provides detailed information on the distribution of workers within each firm by earnings level, age, gender and other worker characteristic.

We enhance these data to include detailed information on health spending, income and family characteristics. The first step was to statistically match each MEPS worker, which we call the "primary worker", with one of the employer health plans in the 2006 KFF/RWJF data. We then populate that firm by randomly assigning other workers drawn from the MEPS file with characteristics similar to those reported for the KFF/RWJF database. For example, a firm assigned to a given MEPS worker that has 5 employees would be populated by that worker plus another four MEPS workers chosen at random who also fit the employer's worker profile.

This process is repeated for each worker in the HBSM data to produce one unique synthetic firm for each MEPS worker (about 63,000 synthetic firms). Synthetic firms are created for all workers including those who do not sponsor health insurance, and workers who do not take the coverage offered through work.

2 Expected Health Spending by Firm

As discussed above, insurers often take health status into account in setting small group premiums. In states where permitted, rating is affected by historical claims experience and other health status information. To simulate the rate setting process, we develop a process for estimating expected health care costs for each firm at the beginning of each rating year, which we assume is used as the basis of all health status related decisions. We do this by calculating health spending for workers in each firm for each of two consecutive years using data provided for working families in the MEPS.

As discussed above, the MEPS include detailed health spending data for two consecutive years for each individual, which is included for each worker assigned to each firm. Thus, we are able to tabulate average spending for workers in each firm in the second year by percentile ranking of average employee spending in the prior year as shown in ***Figure B-8***.

In this simulation, we assume that the insurer is estimating this expected spending level for each firm at the end of the first year to use in setting premiums for the coming year. We do this by assigning to each firm an expected spending level for the second year using the data shown in ***Figure B-8***. This expected value is used to set premiums at the beginning of the second year.

Naturally for each firm, actual spending in the second year (which we term the simulation year) will differ from the predicted average expected spending amounts depending upon the expenses actually experienced by workers in the second year. This reflects that while insurers cannot know actual spending for each group in advance, they can use medical information to predict spending levels that will on average track with actual spending during the rating year.

Figure B-8
Average Costs Per Person in Two Consecutive Years for Synthetic Firms Groups by Percentile Ranking of First Year Group Costs by Firm Size in 2010

Percentile of Year 1 Costs	Average Costs Per Covered Individual									
	Under 10		10-24		25-99		100-199		1,000-5,000	
	Year 1 Costs	Year 2 Costs	Year 1 Costs	Year 2 Costs	Year 1 Costs	Year 2 Costs	Year 1 Costs	Year 2 Costs	Year 1 Costs	Year 2 Costs
10 Percent	$142	$1,132	$684	$1,578	$1,250	$1,912	$2,003	$2,406	$2,547	$2,598
20 Percent	$397	$1,633	$1,114	$1,885	$1,688	$2,250	$2,390	$2,675	$2,752	$2,815
30 Percent	$658	$1,759	$1,443	$2,123	$1,981	$2,453	$2,616	$2,818	$2,870	$2,911
40 Percent	$961	$1,885	$1,755	$2,325	$2,245	$2,608	$2,799	$2,950	$2,968	$2,987
50 Percent	$1,372	$2,311	$2,093	$2,551	$2,510	$2,752	$2,970	$3,068	$3,068	$3,078
60 Percent	$1,960	$2,730	$2,476	$2,756	$2,795	$2,936	$3,141	$3,180	$3,172	$3,194
70 Percent	$2,646	$2,744	$2,932	$3,021	$3,129	$3,058	$3,331	$3,298	$3,290	$3,294
80 Percent	$3,402	$3,398	$3,571	$3,381	$3,571	$3,296	$3,569	$3,404	$3,434	$3,412
90 Percent	$5,631	$5,446	$4,703	$3,793	$4,236	$3,599	$3,919	$3,585	$3,638	$3,538
95 Percent	$7,897	$5,619	$6,392	$4,631	$5,189	$4,004	$4,403	$3,835	$3,917	$3,784
97.5 Percent	$13,123	$8,300	$8,396	$5,376	$6,201	$4,428	$4,925	$4,200	$4,220	$4,029
98.75 Pct	$20,262	$11,294	$10,849	$5,810	$7,357	$4,672	$5,452	$4,485	$4,599	$4,548
100 Percent	$40,825	$19,210	$16,406	$7,280	$9,823	$5,332	$6,421	$4,713	$5,262	$4,931
Total	$3,467	$3,467	$2,852	$2,852	$2,913	$2,913	$3,153	$3,153	$3,151	$3,151

Source: The Lewin Group estimates using HBSM Synthetic firm data.

3. Insurer Rating Practices

The methods used by insurers to rate small group insurance vary with state regulations and insurer policy. ***Figure B-9*** presents a summary of the small group rating rules that apply in each state supplied by the National Association of Health Underwriters (NAHU). In some states, insurers are not allowed to vary premiums with health status, but are allowed to vary premiums by age subject to rating bands. New York, for example, has a community rated system, which means that insurers are required to charge a single premium for each product for all small groups purchasing coverage in the state by geographic area.

Figure B-9: State Rating Limits for Small Group Markets

St No.	State Name	Group Size		Rating Limits
		Min	Max	
1	Alabama	2	50	4: +/- 20-25% rating bands
2	Alaska	2	50	3: +/- 30-35% rating bands
3	Arizona	2	50	2: +/- 50% rating bands
4	Arkansas	2	50	4: +/- 20-25% rating bands
5	California	2	50	4: +/- 20-25% rating bands
6	Colorado	1	50	5: ACR: adjusted community rating
7	Connecticut	1	50	5: ACR: adjusted community rating
8	Delaware	1	50	3: +/- 30-35% rating bands
9	Dist of Columbia	2	50	1: NRS: no rating structure
10	Florida	1	50	4: +/- 20-25% rating bands
11	Georgia	2	50	4: +/- 20-25% rating bands
12	Hawaii	1	50	3: +/- 30-35% rating bands
13	Idaho	2	50	2: +/- 50% rating bands
14	Illinois	2	50	4: +/- 20-25% rating bands
15	Indiana	2	50	3: +/- 30-35% rating bands
16	Iowa	2	50	4: +/- 20-25% rating bands
17	Kansas	2	50	4: +/- 20-25% rating bands
18	Kentucky	2	50	3: +/- 30-35% rating bands
19	Louisiana	2	35	3: +/- 30-35% rating bands
20	Maine	1	50	4: +/- 20-25% rating bands
21	Maryland	2	50	3: +/- 30-35% rating bands
22	Massachusetts	1	50	5: ACR: adjusted community rating
23	Michigan	2	50	2: +/- 50% rating bands
24	Minnesota	2	50	4: +/- 20-25% rating bands
25	Mississippi	1	50	4: +/- 20-25% rating bands
26	Missouri	2	25	4: +/- 20-25% rating bands
27	Montana	2	50	4: +/- 20-25% rating bands
28	Nebraska	2	50	4: +/- 20-25% rating bands
29	Nevada	2	50	4: +/- 20-25% rating bands

St No.	State Name	Group Size		Rating Limits
		Min	Max	
30	New Hampshire	1	50	4: +/- 20-25% rating bands
31	New Jersey	2	50	5: ACR: adjusted community rating
32	New Mexico	2	50	4: +/- 20-25% rating bands
33	New York	2	50	6: C: pure community rating
34	North Carolina	1	50	4: +/- 20-25% rating bands
35	North Dakota	2	25	3: +/- 30-35% rating bands
36	Ohio	2	50	3: +/- 30-35% rating bands
37	Oklahoma	2	50	4: +/- 20-25% rating bands
38	Oregon	2	50	5: ACR: adjusted community rating
39	Pennsylvania	2	50	1: NRS: no rating structure
40	Rhode Island	1	50	3: +/- 30-35% rating bands
41	South Carolina	2	50	4: +/- 20-25% rating bands
42	South Dakota	2	50	4: +/- 20-25% rating bands
43	Tennessee	2	25	3: +/- 30-35% rating bands
44	Texas	2	50	4: +/- 20-25% rating bands
45	Utah	2	50	3: +/- 30-35% rating bands
46	Vermont	1	50	5: ACR: adjusted community rating
47	Virginia	2	50	4: +/- 20-25% rating bands
48	Washington	2	50	5: ACR: adjusted community rating
49	West Virginia	2	50	3: +/- 30-35% rating bands
50	Wisconsin	2	50	3: +/- 30-35% rating bands
51	Wyoming	2	50	3: +/- 30-35% rating bands

Figure B-10 summarizes the rating factors we assume are used for states with various types of rating restrictions. While many states limit premium variation with rating bands, insurers are often permitted to use a variety of other rating factors such as age, industry, group size and health status. Less is known about the use of these rating factors because they are optional to the insurer.

Figure B-10: Rate Tables used for Rating Method Type for Small Groups

		Age Rating	Loss Ratio
1:	no rating structure	based on Figure 11	4:1
2:	+/- 50% rating bands	based on Figure 11	4:1
3:	+/- 30-35% rating bands	based on Figure 11	3:1
4:	+/- 20-25% rating bands	based on Figure 11	3:1
5:	Modified community rating	4:1	None
6:	pure community rating	none	None

Consequently, we randomly assign the rating structures that will be applied to each firm in the data, subject to state limits on premium variation. Based upon prior studies by the Congressional Research Service and information supplied by actuaries, we assume the prevalence of use for these rating factors is as shown in ***Figure B-11***.

Figure B-11: Rating Factor Distribution Table

	Firm Size		
	Under 10	**10-24**	**25-99**
Age rating	100%	100%	100%
Industry	79%	97%	98%
Group size	80%	64%	80%
Health status	75%	72%	80%

4. Age and Gender Rates

Insurers typically estimate small group premiums based upon a combination of factors applied sequentially to a base premium amount. The first step is to estimate a premium based upon the age and gender of their workers. Here we start with a base rate for each individual worker that is then adjusted to reflect differences in costs by age and sex. We use single year of age by gender and health status - as reflected in the expected loss ratio - in states with minimal rate regulation (***Figure B-12***). For others, we use rating bands that vary from 4:1 to 3:1 adjustments depending upon the degree of rate compressions required in the firm's state of residence (***Figure B-13***). At this point, the firm premium is the sum of the age and sex adjusted premiums for each person in the group.

Figure B-12: Age Rating Factors Single Year of Age by Gender Premium Adjustment

Age	Individuals		Family	
	Male	Female	Male	Female
17	0.4869	0.6008	0.4016	1.6568
18	0.4469	0.5868	0.5579	1.5048
19	0.4503	0.6320	0.8402	1.2249
20	0.4303	0.8518	1.0727	0.8905
21	0.4403	0.9057	1.0727	0.7201
22	0.4503	0.9640	1.1487	0.6747
23	0.4476	0.9989	1.0530	0.7020
24	0.4576	1.0664	0.9027	0.7068
25	0.4662	1.3368	0.8242	0.7227
26	0.4762	1.2984	0.8106	0.7676
27	0.5000	1.2995	0.8773	0.7805
28	0.5120	1.2711	0.9247	0.7490
29	0.5243	1.2457	0.9284	0.7200
30	0.5368	1.2937	0.8832	0.8285
31	0.5497	1.3247	0.8832	0.8285
32	0.5629	1.3564	0.8881	0.8530
33	0.5815	1.4013	0.9053	0.8271
34	0.6007	1.4475	0.9153	0.7442
35	0.6225	1.1780	0.9838	0.6967
36	0.6423	1.2155	1.0953	0.6761
37	0.6622	1.2531	1.2067	0.6761
38	0.6887	1.3033	1.2071	0.6868
39	0.7152	1.3534	1.1226	0.7012
40	0.7450	1.2852	1.0025	0.7448
41	0.7748	1.2556	0.9341	0.7900
42	0.8046	1.2260	0.9069	0.8208
43	0.8377	1.2015	0.9033	0.8508
44	0.8741	1.1820	0.9119	0.8656
45	0.9105	1.1092	0.9021	0.8906
46	0.9503	1.1423	0.9208	0.8464
47	0.9900	1.1754	0.9533	0.7726
48	1.0430	1.2085	1.0383	0.6960
49	1.0960	1.2416	1.0771	0.6681
50	1.1522	1.2747	1.0888	0.6642
51	1.2152	1.3112	1.1270	0.6298
52	1.2781	1.3476	1.2501	0.6008
53	1.3476	1.3973	1.4569	0.6252
54	1.4204	1.4469	1.5695	0.7218
55	1.4966	1.4966	1.6303	0.8404
56	1.5794	1.5496	1.5560	0.9069
57	1.6621	1.6059	1.5217	0.9273
58	1.7548	1.6688	1.4037	0.9276
59	1.8542	1.7350	1.3323	0.9605
60	1.9568	1.8045	1.2751	1.1107
61	2.0661	1.8740	1.3481	1.4748
62	2.1820	1.9502	1.5066	2.1395
63	2.2945	2.0197	1.7577	2.9443
64	2.4137	2.0926	2.1359	3.6889
65	2.8144	2.3277	2.6246	4.2686

Figure B-13
Rating factors by age in states with Rating Bands

Age Adjustment: 4:1 Rate Band		
< 20	0.5737	1.0426
20-24	0.6646	0.8932
25-29	0.6712	0.8165
30-34	0.8899	0.8566
35-39	0.8856	0.9603
40-44	1.2239	0.8895
45-49	1.5479	0.9085
50-54	1.4842	1.0865
55-59	1.4457	1.3230
60+	2.2627	2.0021
Age Adjustment 3:1 Rate Band		
< 25	0.6355	0.9190
25-34	0.7517	0.8407
35-44	1.0635	0.9234
45-54	1.5191	0.9704
55+	1.9144	1.5726

In states with little or no regulation of rates, we assume that insurers use single year of age. In states with rating bands of +/- 50 percent, we assume rates vary with age on a 4:1 basis. The age rate band is assumed to be 3:1 in states with 30 percent to 50 percent rating bands and 3:1 in states with rating bands of less than 30 percent. We assume 4:1 rate variation by age in states with adjusted community rating, which does not permit rates to vary with health status and other factors.

5. Industry and Group Size Adjustment

We also adjust for major industry groups in setting premiums. As discussed above, we use a probability table to determine whether the insurer adjusts for industry in rating groups. ***Figure B-14*** presents two sets of rate adjustment factors by industry. The first is an adjustment for premiums that assumes the group has not been rated by age or any other factor.

The second is a factor that applies to cases where the first stage premium calculation is based on age and gender. This is a conditional adjustment that is designed to capture premium variation by industry that is not already explained by adjusting for age and gender. We estimate both of these adjustments using the MEPS data for people with employer health insurance.

Figure B-14: Rate Variation by Industry

	Individual		Family	
	Industry not Adjusted	Age/Sex Adjusted	Industry not Adjusted	Age/Sex Adjusted
Agriculture	1.0925	1.1795	0.9339	0.9587
Mining	1.1069	1.1845	1.0010	0.9962
Construction	1.2331	1.3397	0.9626	0.9681
Manufacturing	1.1223	1.1838	1.0152	0.9649
Transportation	1.1072	1.1865	1.0469	0.9863
Wholesale Trade	0.4861	0.5710	0.9907	1.0025
Retail Trade	0.5261	0.6023	0.9890	0.9673
Finance	1.1335	1.2115	0.9910	0.9871
Services	0.8731	0.8256	1.0708	1.1256
S&L Gov	1.1679	1.0621	1.0095	1.0585
Individuals	1.0698	1.0452	0.8025	0.7697

In addition, we adjust for group size in cases where the model selects a firm to be rated on the basis of group size, in addition to other factors. The rate adjustments are conditional depending upon the factors used thus far to set the premium. Thus, for example, the group size adjustment is only the factor that explains premium variation beyond what has already been captured with a prior stage adjustment such as age or industry. *Figure B-15* presents the adjustment factors used depending upon the factors use to adjust the premium to this point in the calculation.

6. Loss Ratio Adjustments

In the final step, we perform a health status adjustment based upon a loss ratio calculated in the model for each firms in states where health status rating is permitted. We estimate these factors by using the rating factors described above to calculate a premium for each group. We then divide estimated average expected costs for the group over the adjusted premium. The result is an adjuster that accounts for the variation in expected health care costs that is not explained by the other rating factors described above.

We estimate these adjusters conditioned on the use of other rating factors in setting the premium up to this point. We assume that the loss ratio adjustment varies from 4:1 to 3:1 depending upon the allowable rate band in their state of residence. These adjusters are shown in ***Figure B-16***.

Figure B-15: Rate Variation by Group Size

	Individual				Family			
	Group Size Adjusted Only	Age/Sex Adjusted Only	Age/Sex Industry Adjusted	Industry Adjusted Only	Group Size Adjusted Only	Age/Sex Adjusted Only	Age/Sex Industry Adjusted	Industry Adjusted Only
2-9	0.9751	0.9413	1.0076	1.0651	0.9558	0.9621	0.9312	0.9339
10-24	0.9172	0.9344	0.9813	1.0079	0.9840	1.0201	0.9977	0.9658
25-99	0.8996	0.9436	0.9800	0.9674	0.9823	1.0296	1.0084	0.9626
100-499	0.9318	0.9095	0.9856	0.9999	1.0555	1.0282	1.0025	1.0314
500-999	0.9906	1.0015	1.0031	0.9989	1.0464	1.0408	1.0189	1.0247
1000-4999	1.0503	1.0484	1.0174	0.9980	1.0397	1.0255	0.9976	1.0215

Figure B-16: Health Status Adjustment Based on Expected Loss Ratio

	No Age & Sex Adjustment				Age/Sex Adjustment			
	Unadjusted	Group	Industry	Group Size and Industry	Unadjusted	Group	Industry	Group Size and Industry
Loss Ratio 4:1 Rate Band								
0-50	0.4513	0.4635	0.4705	0.4734	0.4944	0.5137	0.5126	0.5151
50-75	0.8500	0.8523	0.8623	0.8655	0.8730	0.8645	0.8858	0.8753
75-100	0.9851	0.9785	0.9804	0.9835	0.9874	0.9879	1.0010	1.0054
100-125	1.1063	1.0818	1.0974	1.0816	1.0967	1.0719	1.0657	1.0591
125-150	1.2121	1.1993	1.1882	1.1868	1.1829	1.1768	1.1634	1.1659
150+	1.9832	2.0597	1.9976	2.0280	1.8891	1.9320	1.9125	1.9144
Loss Ratio 3:1 Rate Band								
0-75	0.6135	0.6333	0.6353	0.6400	0.6447	0.6631	0.6654	0.6666
75-100	0.9851	0.9785	0.9804	0.9835	0.9874	0.9879	1.0010	1.0054
100-125	1.1063	1.0818	1.0974	1.0816	1.0967	1.0719	1.0657	1.0591
125+	1.6204	1.6736	1.6343	1.6582	1.5543	1.5925	1.5737	1.5838

C. Simulating Enrollment in High-Risk Pools

To determine the number of people that will be enrolled in high-risk pools prior to the implementation of the ACA, we compile the number of members and monthly allowed costs per member in existing state high-risk pools for 2013 (***Figure B-17***). We also estimate the number of members and average monthly allowed costs for people that we anticipate will be enrolled in the temporary federal high risk-pools for each state in 2013. We trend the allowed cost number to 2014 (our simulation year) by six percent to account for health care inflation.

Neither the Current Population Survey (CPS) nor the Medical Expenditure Panel Survey (MEPS), which are the primary data sources for HBSM, provides information on people enrolled in high-risk pools. Therefore, we need to impute high-risk pool coverage in HBSM. To do this, we select a subset of people with non-group coverage that also had a health condition that is typically used to determine eligibility for existing state high-risk pools.

We randomly select people that met the above criteria in each state in the HBSM data so to match the total number of people we project to be enrolled in either the current state high-risk pools or the temporary federal high-risk pools. We then adjust the average monthly spending for these people in HBSM to match our estimates for each state. We then adjusted the average covered costs for people remaining in the non-group market so to match the NAIC data, which we have assumed does not include high-risk pool enrollees.

This imputation method may potentially overstate our baseline cost estimates for uninsured people. Our coverage estimates are based on data prior to the implementation of the federal high-risk pools, where enrollees in this program would be categorized as uninsured. Thus, some of the higher cost uninsured in the data would now be covered through the high risk pool, which would reduce the overall average cost for those remaining uninsured. However, we do not believe that this makes a material difference in the estimate do to the fact that only about 164,000 of the 52.4 million uninsured are assumed to be enrolled in the Federal high risk pool. However, the reader can make a determination for a particular state based on the information presented.

Figure B-17: Estimated High-Risk Pool Enrollment and Allowed Cost in 2013

	Current State High-Risk Pools		Temporary Federal High-Risk Pools		Combined State and Federal High-Risk Pools	
State	Members	Allowed Cost PMPM	Members	Allowed Cost PMPM	Members	Allowed Cost PMPM
ALABAMA	2,050	$1,158	1,300	$3,824	3,350	$2,193
ALASKA	526	$2,576	46	$13,885	572	$3,485
ARIZONA	0	$0	8,453	$2,713	8,453	$2,713
ARKANSAS	2,696	$992	1,381	$1,548	4,077	$1,181
CALIFORNIA	6,051	$1,052	26,790	$3,921	32,841	$3,393
COLORADO	13,775	$1,165	1,907	$3,345	15,682	$1,430
CONNECTICUT	1,492	$1,801	1,133	$1,821	2,625	$1,810
DELAWARE	0	$0	472	$1,432	472	$1,432
DC	0	$0	100	$1,680	100	$1,680

State	Current State High-Risk Pools		Temporary Federal High-Risk Pools		Combined State and Federal High-Risk Pools	
	Members	Allowed Cost PMPM	Members	Allowed Cost PMPM	Members	Allowed Cost PMPM
FLORIDA	202	$1,262	18,322	$2,690	18,524	$2,674
GEORGIA	0	$0	5,056	$2,778	5,056	$2,778
HAWAII	0	$0	246	$3,171	246	$3,171
IDAHO	1,794	$851	1,821	$7,052	3,615	$3,975
ILLINOIS	20,445	$1,271	4,412	$2,013	24,857	$1,403
INDIANA	7,364	$1,981	3,389	$2,673	10,753	$2,199
IOWA	3,234	$1,375	478	$2,604	3,712	$1,534
KANSAS	1,476	$1,860	735	$3,829	2,211	$2,514
KENTUCKY	4,430	$1,494	2,233	$1,867	6,663	$1,619
LOUISIANA	1,738	$1,330	2,521	$2,091	4,259	$1,781
MAINE	0	$0	69	$5,399	69	$5,399
MARYLAND	20,238	$1,040	1,634	$2,186	21,872	$1,126
MASSACHUSETTS	0	$0	49	$4,054	49	$4,054
MICHIGAN	0	$0	4,036	$3,927	4,036	$3,927
MINNESOTA	26,476	$1,207	1,344	$2,103	27,820	$1,250
MISSISSIPPI	3,299	$1,137	680	$3,763	3,979	$1,586
MISSOURI	3,986	$1,412	3,285	$3,291	7,271	$2,261
MONTANA	2,775	$1,154	428	$2,624	3,203	$1,351
NEBRASKA	3,824	$1,531	809	$3,905	4,633	$1,945
NEVADA	0	$0	2,363	$3,451	2,363	$3,451
NEW HAMPSHIRE	2,751	$1,121	1,149	$6,150	3,900	$2,603
NEW JERSEY	0	$0	1,638	$3,491	1,638	$3,491
NEW MEXICO	8,442	$1,509	2,076	$2,860	10,518	$1,776
NEW YORK	0	$0	6,645	$3,012	6,645	$3,012
NORTH CAROLINA	9,280	$896	8,459	$759	17,739	$831
NORTH DAKOTA	1,443	$950	185	$4,581	1,628	$1,364
OHIO	0	$0	4,453	$1,968	4,453	$1,968
OKLAHOMA	2,515	$1,735	1,316	$3,366	3,831	$2,295
OREGON	11,761	$1,313	2,324	$3,647	14,085	$1,698
PENNSYVANIA	0	$0	8,545	$1,287	8,545	$1,287
RHODE ISLAND	0	$0	204	$2,981	204	$2,981
SOUTH CAROLINA	1,739	$1,426	2,903	$2,650	4,642	$2,192
SOUTH DAKOTA	610	$1,283	271	$7,623	881	$3,233
TENNESSEE	3,132	$1,376	2,919	$2,823	6,051	$2,074
TEXAS	24,174	$1,454	14,848	$4,856	39,022	$2,749
UTAH	3,666	$1,013	1,808	$3,530	5,474	$1,844
VERMONT	0	$0	0	$0	-	$0
VIRGINIA	0	$0	4,626	$2,440	4,626	$2,440
WASHINGTON	3,706	$2,420	1,156	$4,613	4,862	$2,941
WEST VIRGINIA	1,173	$842	340	$2,498	1,513	$1,214
WISCONSIN	21,645	$1,114	3,043	$1,043	24,688	$1,105
WYOMING	1,001	$1,310	506	$1,844	1,507	$1,490

D. Simulating Non-Group Premiums under the ACA

The model simulates premiums for people in the individual market under the ACA using rating restrictions specified in the Act. The ACA allows rating variation based only on age (limited to 3:1), geography, family composition and tobacco use (limited to 1.5:1). Similar to the steps described above for calculating individual market premiums, the HBSM model uses a premium equal to the base rate for single and family coverage which is adjusted for age, single/family coverage and state. The model does not include data on tobacco use, so we do not adjust for tobacco use. Gender, health status and expected loss ratios are not used in that ACA premium calculation.

The age adjustments are estimated from the MEPS data for privately insured people. These adjustments are performed separately for individual policy holders and family policy holders. The model uses a base rate for individuals and a base rate for family coverage, both of which vary with the age of the policyholder only. ***Figure B-18*** shows the age adjustments used for the 3:1 rating limits.

Figure B-18: Age Rating Factors in the Individual Market under the ACA

	Individual	Family
Age Adjustment Limited to 3:1 Rate Band		
< 25	0.6355	0.9190
25-34	0.7517	0.8407
35-44	1.0635	0.9234
45-54	1.5191	0.9704
55+	1.9144	1.5726

CMS recently released its proposed standard age curve by single year of age, which is different from the method used for this analysis. However, we do not believe this difference will make a material difference because premium subsidies have a much larger impact on the cost of insurance to individuals in our simulation as compared to premium rating practices. Using age bands will, as we have done in this analysis, has the effect of compressing premium variation for all ages within the age band. Premiums based on single year of age will result in more variation across all ages. For states that currently do not have rating restrictions, which we assume use single year of age rating plus health status rating, that will move to a 3:1 rating limit using age bands could produce a greater difference in premiums (current compared to ACA) for certain ages as compared to premiums using a single year of age curve as proposed by CMS. Since this analysis uses an elasticity model to simulate participation that is based on a change in price, then these premium differences could have an effect on who participates.

However, we estimate that most people purchasing coverage in the individual market under the ACA will receive premium subsidies, which effectively reduces premium costs. We found that premium subsidies have the largest impact on change in price of insurance and thus the largest impact on participation. Because premium subsidies have such an impact on the cost of insurance to individuals in our simulation, premium calculations using a single year of age

curve versus an age band curve does not make a material difference for simulating non-group participation under the ACA.

E. Simulating Small Group Premiums under the ACA

The model simulates premiums for fully insured small groups (100 or fewer members) under the ACA using rating restrictions specified in the Act. Similar to the individual market, the ACA allows rating variation based only on age (limited to 3:1), geography, family composition and tobacco use (limited to 1.5:1) in the small group market. Similar to the steps described above for calculating small group premiums under current law, HBSM estimates a premium based only upon the age workers in the group. Here, we start with a base rate for each individual worker that is then adjusted to reflect differences in costs by age. As specified under the ACA, we restrict rating variation to 3:1 ratio based on the adjustments shown in ***Figure B-18***. At this point, the firm premium is the sum of the age and sex adjusted premiums for each person in the group. The model does not include data on tobacco use, so we do not adjust for tobacco use. Health status and expected loss ratios are not used in that ACA premium calculation nor are new taxes and fees.

For modeling purposes, we assume that premiums for self-insured firms and large groups are unaffected under the ACA.

Appendix C – State Specific Excel Spreadsheets

The Excel spreadsheets can be found on the web page that is housing this report on the SOA web site.

