

# **POTENTIAL IMPACT OF INVALIDATING THE AFFORDABLE CARE ACT ON THE INDIVIDUAL MARKET**

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# 1

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## Executive Summary

We prepared this report for the Blue Cross and Blue Shield Association (“BCBSA”) in support of its *amicus curiae* brief in *Texas v. United States*<sup>1</sup> (the “Litigation”). Our report contains this Executive Summary, an Analysis using our Healthcare Reform Micro-Simulation Model (HRMM) to illustrate the real-world impact of several possible outcomes of the Litigation on the individual market for health insurance, and an Appendix describing our methods.

In short, we find that the individual health insurance market would function better if the Affordable Care Act’s (the “ACA”) individual mandate to purchase insurance is enforced through an individual mandate payment, as it was before the reforms enacted in 2017. Even without such a payment, however, an individual market that operates pursuant to the ACA’s other key provisions will provide affordable health insurance to millions more enrollees than a market without these provisions. More specifically:

- Even without an enforceable individual mandate, we expect that the premium and cost sharing assistance available to lower-income insureds will make it so that the individual market under the current ACA rules (*i.e.*, the ACA without an individual mandate payment) could continue to provide coverage to around 11.1 million enrollees in 2020, including 8.4 million enrollees with income levels that qualify them for the ACA’s subsidies.
- Reinstatement of the individual mandate payments to the levels in effect for 2018 with indexing, could increase ACA enrollment in 2020 by 1.2 million and decrease the market-wide average premium rate by 5%.
- The ACA’s two principal subsidies—advance premium tax credits (“APTCs”) and cost-sharing reduction payments (“CSRs”)<sup>2</sup>—are critical to the continued operation of the individual market. If the APTCs and CSRs that are currently available in the individual market were eliminated, but all other ACA requirements remained in place, issuers would not be able to set premium rates in the individual market without taking significant financial losses. This would trigger an exit of issuers from the ACA individual market leaving only those individuals with

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<sup>1</sup> Case No. 19-10011 (5th Cir.)

<sup>2</sup> See sections 1401, 1402, 14011-1415 of the Part I of Title I of the ACA:  
<https://www.govinfo.gov/content/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>

pre-ACA, transitional and grandfathered plans with comprehensive major medical coverage through the individual market.

- If all ACA requirements related to the individual market were invalidated, the operation of the individual market would be substantially disrupted. Assuming (i) the return of pre-ACA state regulation regarding guaranteed issue<sup>3</sup> and premium rate restrictions<sup>4</sup> became effective and (ii) APTC and CSR subsidies were no longer available, we estimate that enrollment in the individual market would be just over one third of today's enrollment. Even this assumes that issuers have sufficient time to develop new health insurance products, to have those products approved by the relevant regulators, and to develop the operational capabilities (e.g., medical underwriting) to market those products.
- Compared to the demographic composition of the current individual market, without the ACA, the demographic composition of enrollees in the individual market would be younger, healthier and mostly from households with incomes above 400% of the federal poverty level ("FPL"). We estimate that most of those currently insured under the ACA who qualify for APTCs and CSRs would become uninsured if subsidies were no longer available, as would most individuals with pre-existing health conditions.

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<sup>3</sup> <https://www.kff.org/other/state-indicator/individual-market-guaranteed-issue-not-applicable-to-hipaa-eligible-individuals/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

<sup>4</sup> <https://www.kff.org/other/state-indicator/individual-market-rate-restrictions-not-applicable-to-hipaa-eligible-individuals/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

# 2

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## Analysis: Scenarios Modeled and Results

In this section, we discuss the market impact of several potential changes to the ACA. We limit our analysis to the individual market; we do not consider the impact of these scenarios on other sources of coverage, including the employer-sponsored health insurance market or coverage under Medicaid or Medicare. We also focus on the 2020 benefit year.

As background, we estimate that roughly 12.2 million individuals were covered through the ACA individual market in 2018, both on and off the Exchanges.<sup>5</sup> Through the first half of 2018, about 8.9 million total insureds received APTCs to help cover the cost of their premiums, and about 5.4 million also received CSRs to help cover the cost of deductibles and copays.<sup>6</sup> CMS reports that approximately 11.4 million individuals selected or were auto enrolled in an Exchange plan at the end of the 2019 open enrollment period.<sup>7</sup> This excludes individuals enrolling in ACA-compliant coverage off the Exchanges.

We used our HRMM to estimate the baseline market conditions in 2020 without any change, and then modeled the impact of three separate scenarios described below.

### Baseline Scenario

Our baseline scenario assumes that all current ACA statutory provisions and regulations remain in effect, without any changes resulting from the Litigation. Premium rates in 2020 are based on the 2019 rates adjusted for increases in the cost and utilization of covered services<sup>8</sup> and assume an additional 2.2% increase due to the reinstatement of the Section 9010 Fee Tax paid by health insurers as required under the ACA.<sup>9</sup>

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<sup>5</sup> Oliver Wyman calculations using the Interim Summary Report on Risk Adjustment for the 2018 Benefit Year. See <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Premium-Stabilization-Programs/Downloads/Interim-RA-Report-BY2018.pdf>

<sup>6</sup> [https://www.cms.gov/sites/drupal/files/2018-11/11-28-2018 Effectuated Enrollment Table.pdf](https://www.cms.gov/sites/drupal/files/2018-11/11-28-2018%20Effectuated%20Enrollment%20Table.pdf)

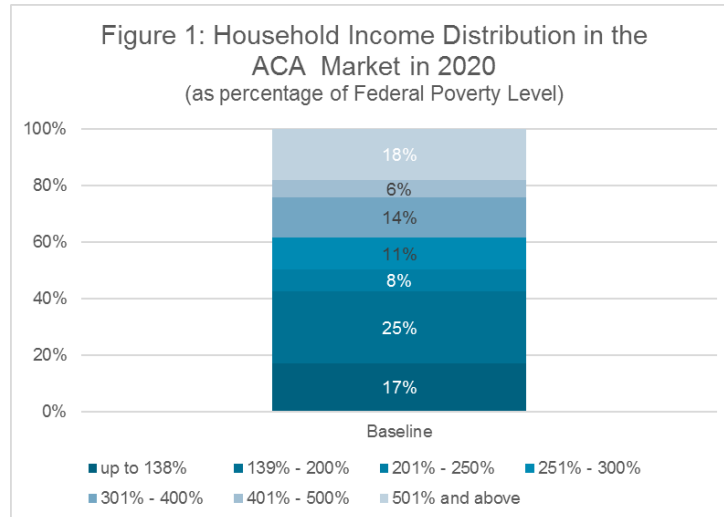
<sup>7</sup> <https://www.cms.gov/newsroom/fact-sheets/health-insurance-exchanges-2019-open-enrollment-report>

<sup>8</sup> We used 7% for this analysis. The recent median medical claim cost trends in the group market are between 7% and 10%, see Oliver Wyman's Carrier Trend Survey: <https://www.oliverwyman.com/our-expertise/insights/2018/feb/carrier-trend-report---january-2018.html>.

<sup>9</sup> <https://health.oliverwyman.com/2018/08/new-analysis--how-the-acas-hit-will-impact-2020-premiums.html>

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Under the baseline scenario, we estimate that 12.1 million individuals will have coverage in the individual markets in 2020 at an average rate of \$678 per member per month (PMPM), with roughly 1.0 million of those covered under non-ACA-compliant, grandfathered or transitional plans. Of the remaining 11.1 million covered under ACA-compliant plans, 8.4 million enrollees will have incomes less than 400% FPL and so would be eligible for APTCs. In Figure 1, we show the distribution of enrollment by income as a percentage of FPL.



Additionally, the market covers those at a variety of health statuses. Thirty percent of those covered rate themselves with “excellent” health, while 33% rate themselves with “very good” health. Twenty-eight percent rate themselves with “good” health, 7% with “fair” health, and 2% with “poor” health.

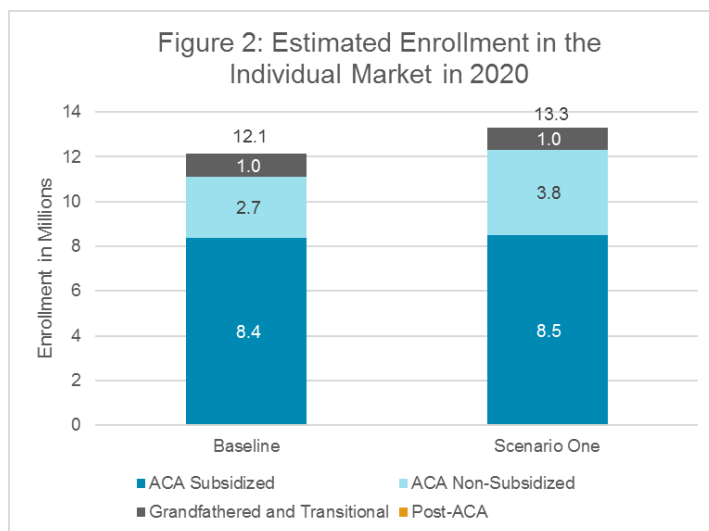
Finally, the market is skewed to an older demographic. Thirteen percent of those covered are older than 61 years old, 26% are between 51-60 years old, 18% are between 41-50 years old, 16% between 31-40 years old, 18% between 21-30 old, and 10% between 0 and 20 years old.

In summary, we anticipate that without the individual mandate payments, the individual market will continue to cover substantial numbers of low- and middle-income and sick enrollees at rates that are affordable when subsidies are considered. Additionally, the age rating restrictions ensure that Americans retain access to health care as they age.

## Scenario One: Reinstatement of the Federal Individual Mandate Payments

In Scenario One, we model what happens if the individual mandate payment is reinstated effective January 1, 2020.<sup>10</sup> We assume the required payment will revert to the level that was effective in 2018 (2.5% of income or \$695, indexed for inflation), but that all other ACA requirements remain unchanged from the baseline. We include this scenario to explore the impact to the individual market of Congress’s decision to render the mandate unenforceable.

As compared to the baseline, if the individual mandate payments were reinstated for 2020, we estimate that an additional 1.2 million people would be covered, and market wide average premiums would decline by 5% relative to the baseline, to \$647 PMPM, as the morbidity and demographics of the single risk pool improve. In Figure 2, we show that a large majority of the increase in enrollment is among those who are not eligible for subsidies.



Reinstatement of the penalty could improve the market, but again, the baseline shows that the reinstatement of the penalty is not necessary to ensure that the ACA individual market remains viable.

## Scenario Two: Ending the Premium Tax Credits and Cost-Sharing Reductions

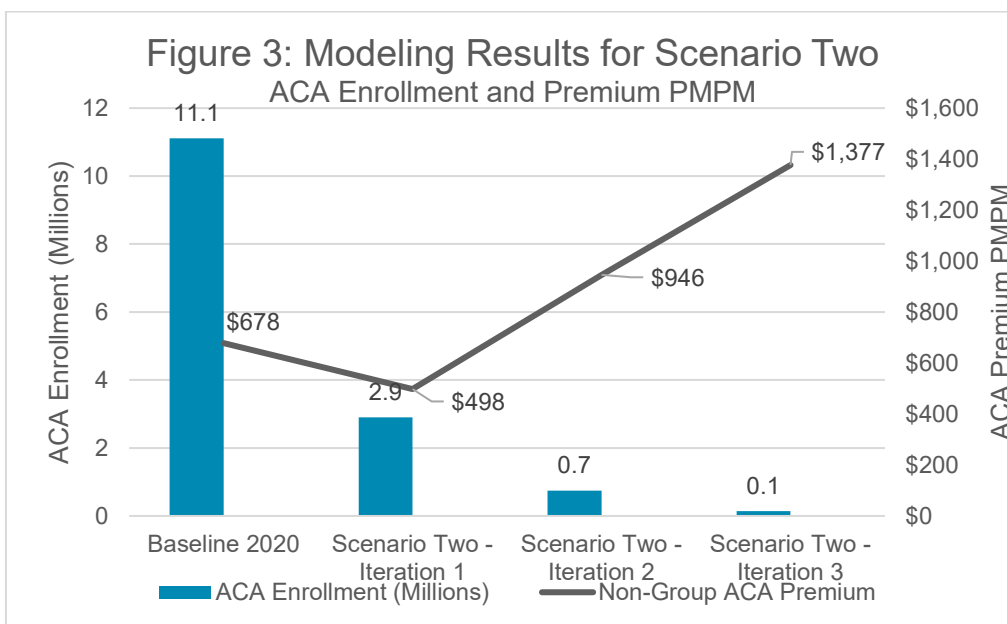
This scenario considers the impact on the ACA individual market if, beginning in 2020, APTCs and CSRs are no longer available to eligible enrollees. All new or returning enrollees would therefore have to pay the full cost of the premiums charged for ACA

<sup>10</sup> The Tax Cuts and Jobs Act set the individual mandate payment amounts to zero percent or \$0 for months after December 31, 2018: <https://www.congress.gov/115/plaws/publ97/PLAW-115publ97.pdf>

coverage without the benefit of subsidized premiums and reduced cost-sharing for qualifying low- and middle-income individuals. All other variables remain consistent with the baseline, including the ACA’s guaranteed issue and community ratings requirements, and the absence of a federal individual mandate payment in outcome. Nevertheless, this scenario helps to examine the significance of the subsidies to the stable market outcome in the baseline.

Under this scenario, the model predicts that the individual market would cease to function. We sought to model the premiums that would be necessary for issuers to cover the cost of their administrative expenses and their insureds’ claims under these market conditions. Our model, however, fails to reach equilibrium.

Essentially, the model sets a premium that individuals must pay to cover the expected cost of their benefits. Absent APTCs, individuals must pay the full cost of coverage, and so only those individuals with relatively high claims take advantage of the guaranteed issue requirement to gain access to coverage. The model reacts and adjusts premiums upward. The higher premiums cause the healthiest individuals in the risk pool to forgo coverage, so the model sets a higher premium to cover the less healthy members who remain covered. This process continues and the model fails to converge on a premium. In simple terms, the modeling suggests that issuers would be unable to participate in the market without suffering severe losses. We provide modeling results in Figure 3.



In iteration 1 in Figure 3, the massive loss in enrollment is due to the elimination of the APTCs and the resulting exit from the market of those with incomes less than 400% FPL, even though premiums decline. While premiums decline by about \$190 PMPM in the first iteration, individuals qualifying for premium subsidies are losing subsidies worth



more than \$600 PMPM. In the second iteration, premiums increase by almost \$290 PMPM, and because at this stage in the modeling, the market consists almost entirely of individuals who are not eligible for premium subsidies, the market again declines significantly, until at iteration 3, only the oldest and sickest individuals remain, and issuers decline to participate in the market.

This result is not surprising to anyone familiar with health insurance markets. Under the baseline scenario, we estimate that the average non-subsidized premium for silver metal level coverage in 2020 would be \$678 PMPM, or roughly \$8,100 per year. Obviously, it would be difficult for a large segment of the population to pay this amount on an annual basis without APTCs, and those most likely to enter the market at this premium level would be motivated to do so by an expectation that their claims would be significantly higher than the monthly premium.

The result is that those who currently rely on APTCs for health insurance would likely be unable to find alternative coverage. Alternative options would be limited because the existing ACA rules would limit issuers' ability to offer comparable coverage at affordable premium rates. Ultimately, we project an increase of more than 11 million individuals who would become uninsured or be under-insured.

### **Scenario Three: Elimination of All ACA Rules from the Individual Market**

This scenario models the impact on the ACA individual market should the entire ACA be invalidated starting in 2020. Under this scenario, we assume that all federal regulations revert to their pre-ACA status. We also assume that issuers would have to apply the state individual market regulations regarding guaranteed issue and rating restrictions that were in effect prior to the full implementation of the ACA in 2010, as summarized by Kaiser Family Foundation.<sup>11</sup> To accomplish this, we modeled two distinct groupings of states:

- 1) States where guaranteed issue applies to all individuals, where there is a prohibition on rating for health status and gender, and age rating is restricted to 3:1 age bands or is fully prohibited.<sup>12</sup>

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<sup>11</sup> <https://www.kff.org/other/state-indicator/individual-market-guaranteed-issue-not-applicable-to-hipaa-eligible-individuals/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

and

<https://www.kff.org/other/state-indicator/individual-market-rate-restrictions-not-applicable-to-hipaa-eligible-individuals/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

<sup>12</sup> These states include Maine, Massachusetts, New York, New Jersey, and Vermont.

- 2) States without the restrictions discussed above. In these states, we assume there is no guaranteed issue requirement, issuers increase premiums up to twice the standard rate due to the health status of the enrollee and decline those who cannot pass underwriting, and that age rating is allowed for up to 5:1.

This grouping does not reflect all the nuances that were present in the state specific guaranteed issue and rating restrictions in the individual market prior to the enactment of the ACA in 2010, nor does it reflect any potential future regulatory changes. For the purposes of our modeling, however, we believe that this grouping adequately reflects the conditions that would exist under this scenario.

Additionally, we assume that the average benefit level or actuarial value of the plans offered for purchase under this scenario would be 60% in all states, meaning that on average 40% of the allowable claims would be covered by the enrollees as out-of-pocket expenses.<sup>13</sup> We make no adjustment in our modeling to reflect that issuers would not need to offer all essential health benefits currently required under the ACA<sup>14</sup> or other benefit requirements,<sup>15</sup> but again believe that this reasonably represents the conditions that would exist under this scenario for the purposes of our modeling.

Finally, we assume that issuers would price plans to a 75% average loss ratio (claims divided by premiums) in the states without guaranteed issue requirements, and to a 90% loss ratio in the five states with a guaranteed issue requirement. The 75% loss ratio reflects the fact that issuers in the states without guaranteed issue would no longer need to meet the ACA's 80% medical loss ratio standard and would likely sell their products primarily through agent and broker channels and so would incur higher marketing costs. The higher 90% loss ratio in the guaranteed issue states assumes that issuers would be able to subsidize the plans sold through gains in other lines of business, or would be required to reduce non-benefit expenses to 10% of premium in developing their premiums.

We believe that the simplified assumptions we make in this scenario would reflect the potential impact on the individual market in broader terms. Substantial regulatory changes such as the invalidation of all the individual market requirements are difficult to predict, and, as such, the impacts to the premiums and enrollment modeled in this scenario should be considered with caution.

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<sup>13</sup> Oliver Wyman estimate based on the average deductible, coinsurance and out of pocket maximum limits for single PPO coverage in the individual market in 2009 based on AHIP report:

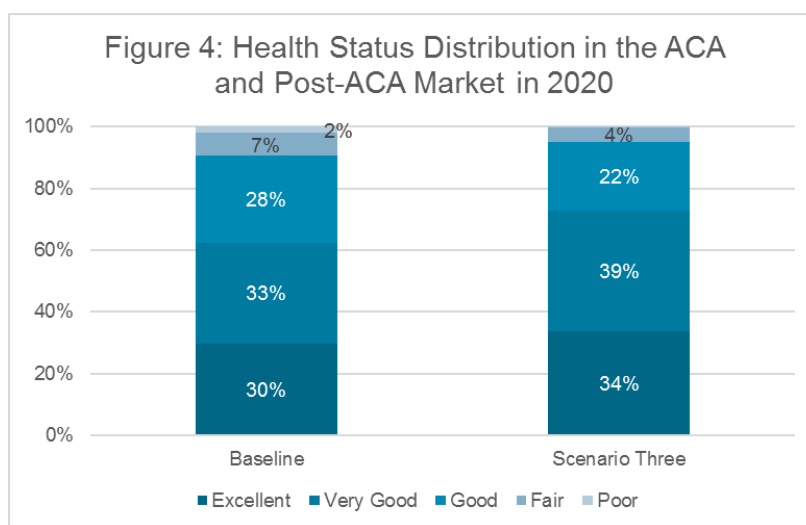
<https://kaiserhealthnews.files.wordpress.com/2013/02/2009individualmarketsurveyfinalreport.pdf>

<sup>14</sup> Sections 1301-1302 of the ACA

<sup>15</sup> Section 1001 of the ACA Amendments to the Public Health Service Act

These results suggest a worse outcome when compared to the individual market that existed before the ACA was enacted in 2010.<sup>16</sup> Our model suggests that the 2020 individual market would be similar to the pre-ACA market with respect to the distribution by age and income, and that a large majority of those with pre-existing health conditions would lack access to coverage. The market would only cover about half of the number enrollees as were covered in the individual market prior to the ACA. This, however, is likely because 2020 would be the first benefit year of the new market. We would expect the market to slowly grow over time, and to remain smaller than the market under the ACA.

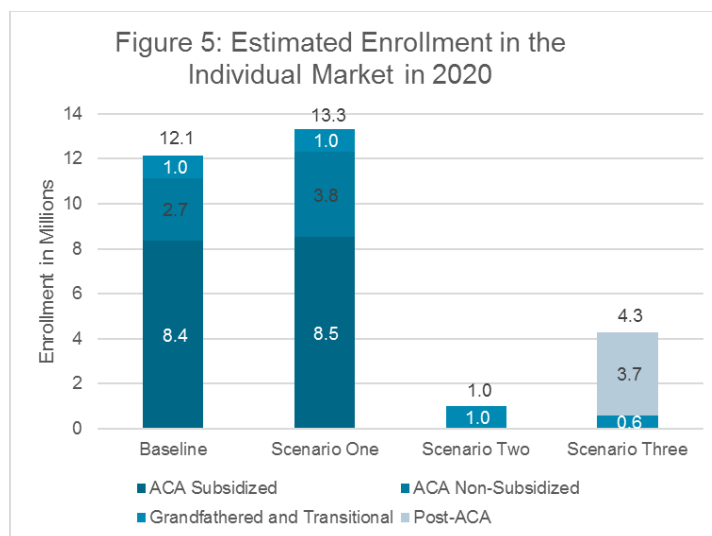
We show the change in health status in Figure 4. Under the baseline, 9% of the 11.1 million insureds, or roughly 1.0 million individuals have self-reported health status of fair or poor, indicating a pre-existing medical condition. Under Scenario Three, where the size of the market declines to 3.7 million (see Figure 5), only 4% of enrollees would have a health status of fair, and essentially none would have a self-reported health status of poor. This presents the loss of access to medical coverage of almost one million individuals in fair and poor health.



### Comparing the Scenarios Across Key Metrics

In Figures 5 through 9 we break down the results of each scenario and compare them across key metrics including enrollment, demographic composition, and market average premiums.

<sup>16</sup> See, for example, <https://www.cms.gov/CCIIO/Resources/Data-Resources/mlr.html>

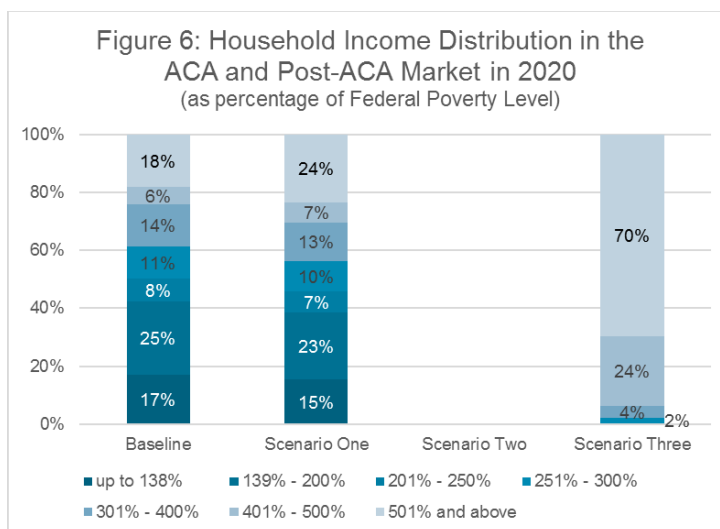


In Figure 5, we show that even without a federal individual mandate, the individual market provides health insurance for a substantial number of enrollees, including millions of low- and middle-income enrollees eligible for subsidies. Specifically, we expect 11.1 million individuals to have ACA coverage in 2020, and that there will be another 1.0 million with grandfathered and transitional policies, for a total of 12.1 million individuals in the individual market.

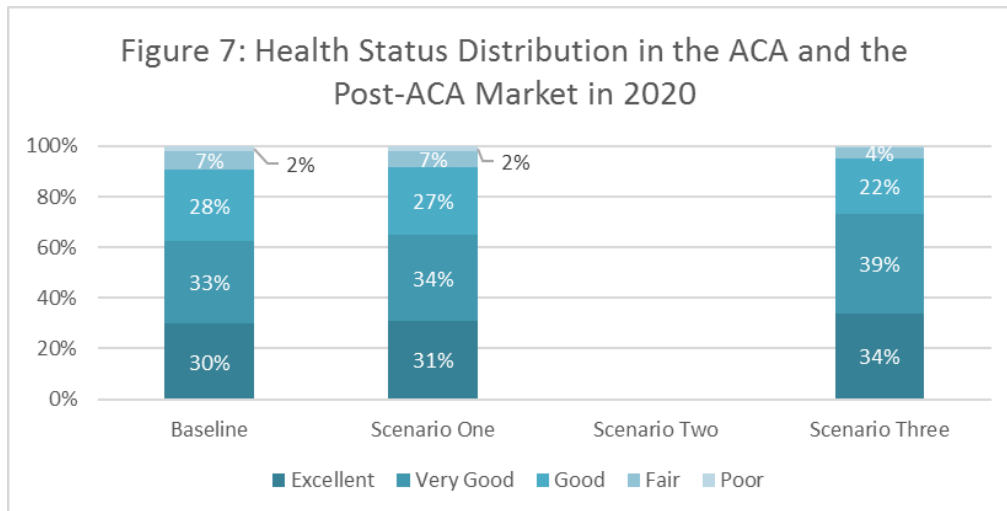
While functional, the individual market would improve by restoring the individual mandate payment to 2018 levels. Under Scenario One, we project an increase in the ACA individual market enrollment of about 1.2 million enrollees, or roughly 10%. In contrast, however, taking away subsidies would destroy the individual market, and under Scenario Two, only the 1.0 million enrollees covered under transitional and grandfathered plans would maintain their comprehensive medical coverage. Finally, without the ACA, we estimate the post-ACA market enrollment at 4.3 million, just over a third of the baseline enrollment.

Figure 6 further breaks down the individual market under each scenario by income. In the baseline scenario, there is substantial coverage for the lowest-income Americans. Individuals with incomes *greater* than 400% of FPL make up less than one-quarter of the market. Restoring the individual mandate payment causes more, higher-income Americans to participate in the market. This figure, in particular, shows the effect of eliminating the ACA on individual health insurance for poor- and middle-income Americans. Without the ACA, only 222,000 enrollees in the individual market, or 6%, have an income that is less than 400% of the FPL and two-thirds of those individuals have incomes at the upper end of that range, making between 301% and 400% of the FPL.

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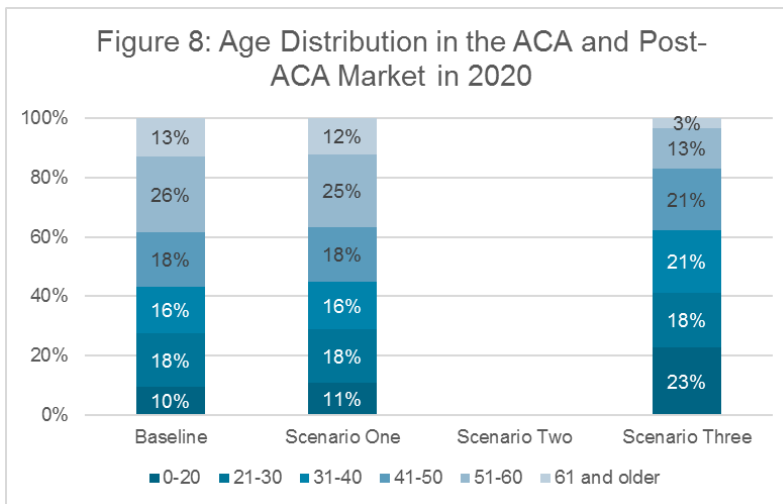
In Figure 7, we show the distribution of ACA individual market enrollees by health status. The model we use to produce these estimates classifies individuals into one of five health status buckets. Under Scenario One, the health status profile of the ACA individual market is slightly healthier than under the baseline, suggesting that an individual shared responsibility payment will incent more healthy people to participate in the individual market.



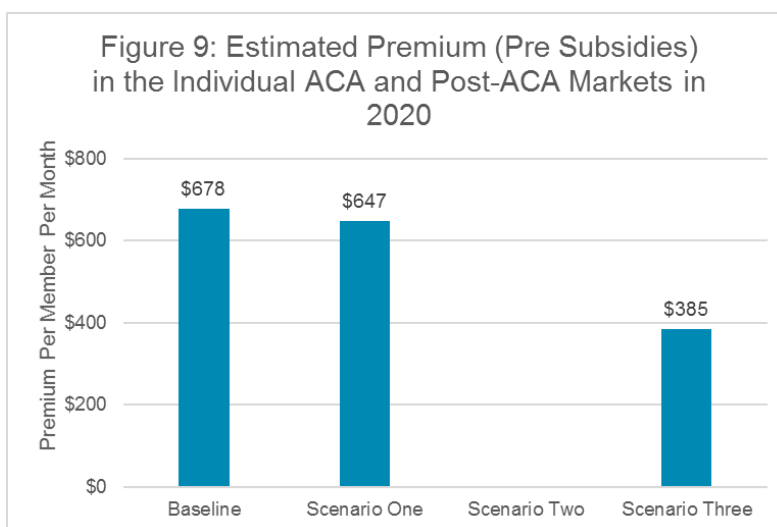
Abolishing the ACA would force many of the sickest enrollees to leave the market. Under Scenario Three, the post-ACA market has the highest share of enrollees in excellent and very good health status. And the percentage of enrollees with fair or poor health is cut in half. This results from the elimination of guaranteed issue and issuers' rating by health status.

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In Figure 8, we see the importance of the ACA’s reforms on coverage for older Americans. While the relative age of those covered does not change substantially between the baseline and Scenario One, under Scenario Three, the proportion of those over 50 years old in the individual market drops from nearly 40% to just 16%, and the proportion of those over 60 years old is cut in four without the ACA.



In Figure 9, we show that eliminating the individual mandate payment causes market-wide average premiums to rise by \$31 PMPM, or about 5%. In the baseline scenario, market wide average premiums are \$678 PMPM, while in Scenario One, they are \$647 PMPM. We estimate the average premium in Scenario Three at \$385 PMPM. The lower premium under Scenario Three results from a combination of a healthier risk pool due to the exclusion of individuals with pre-existing medical conditions, a younger demographic, and lower actuarial value of the health plans.



## Report Qualifications, Assumptions and Limiting Conditions

We prepared this report for the Blue Cross and Blue Shield Association for the purposes stated herein. This report is not to be used for any other purpose.

In this work, we have relied on publicly available data and information without independent audit. Though we have reviewed the data for reasonableness and consistency, we have not audited or otherwise verified this data. It should also be noted that our review of data may not always reveal imperfections. We have assumed that the data and information we relied upon are both accurate and complete. The results of our analysis are dependent on this assumption. If this data or information is inaccurate or incomplete, our findings and conclusions may need to be revised.

Our conclusions are based on data and information that we believe are appropriate for these purposes, and on the estimation of the outcome of many contingent events. Our estimates make no provision for extraordinary future events not sufficiently represented in historical data on which we have relied, or which are not yet quantifiable.

The sources of uncertainty affecting our estimates are numerous and include items such as changes in policies beyond those modeled here such as changes in outreach and advertising, changes in taxes, and changes in federal and state funding.

While this analysis complies with applicable Actuarial Standards of Practice, users of this analysis should recognize that our projections involve estimates of future events and are subject to economic and statistical variations from expected values. We have not anticipated any extraordinary changes to the legal, social, or economic environment that might affect the results of our modeling. For these reasons, no assurance can be given that the emergence of actual results will correspond to the projections in this analysis.

The authors of this report are members of the American Academy of Actuaries and meet that body's Qualifications Standards to perform this work and render the opinions expressed in this report.

## Appendix

### **Oliver Wyman Healthcare Reform Micro-Simulation Model**

The Oliver Wyman Healthcare Reform Micro-Simulation Model (HRMM) is a leading-edge tool for analyzing the impact of various healthcare reforms or proposed legislation. Economic modeling that captures the flow of individuals across various markets based on their economic purchasing decisions is integrated with actuarial modeling designed to assess the impact various reforms are anticipated to have on the health insurance markets. It is this integration of economic and actuarial modeling that allows us to capture the complex migration likely to occur as a result of various market reforms.

The HRMM has three primary modules. The first module characterizes the current population; the second module calibrates the simulated population to the current market; and the third module projects the simulated population in future years given coverage options, choice, and market reforms.

#### ***Characterization of the current population***

In the first module, the population module, the current population was built from several data sources. Data from the 2016 American Community Survey (ACS) was selected as the primary data source and serves as the population basis. The ACS includes information for each respondent's age, gender, income, insurance coverage type, employment status, geographic place of work, geographic place of residence, industry in which he/she is employed, and many other characteristics. The ACS requests information on households, however our model is built on decisions made at the health insurance unit (HIU) level. An HIU is defined as any grouping of family members where each person within the HIU might be eligible for coverage under the same policy. Therefore, when preparing the ACS data for our model, it is adjusted to reflect HIUs.

While there are various sources of data that could be used as a primary data source, we chose to rely on the ACS data for several reasons. First, there is a documented bias in most survey data where Medicaid enrollment is substantially lower than administrative counts. National analysis of this "Medicaid undercount" indicates that many individuals enrolled in Medicaid report their status as either privately insured or uninsured,<sup>17</sup> and the ACS applies logical edits to the data to adjust for this. Second, the ACS questionnaire includes the question, "Is this person CURRENTLY covered by any...health insurance or health coverage plans?"<sup>18</sup> In contrast, the Current Population Survey (CPS) conducted by the Census Bureau assesses insured status over an entire year. The presentation of the question by ACS is more consistent with the HRMM since it examines the population at a single point in time. Third, enrollees are legally obligated to

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<sup>17</sup> <http://www.shadac.org/publications/snacc-phase-v-report>

<sup>18</sup> <https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2016/quest16.pdf>



respond to the ACS,<sup>19</sup> so the response rate is quite high (i.e., 95 percent in 2016).<sup>20</sup> Finally, the ACS includes measures that permit the calculation of standard errors from the sample.

The ACS data is supplemented and synthesized with several other data sources to approximate the current marketplace. Information from the Medical Expenditure Panel Survey (MEPS) is used to create the current employer market. Individuals identified as working for private employers are randomly categorized into employer group size segment (e.g., small employer groups) based on the distribution of group size using the MEPS data. Information from the insurer/employer component of MEPS is used to determine which employed individuals will be offered insurance coverage. The results from the 2015 MEPS insurance/employer component data were used to establish the distribution of groups by group size (i.e., small employers and large employers) and the rates at which coverage was offered by state at various group sizes. Membership reports from CMS are used to size the current Medicaid and Medicare populations.

### ***Definition of Insurance Coverage Types***

#### ***Individual Market***

Major medical health insurance coverage purchased by HIUs from health insurers, whether purchased directly from health insurers, through an agent or broker, or via the federal Exchange. This purchasing option is evaluated for all individuals, except for those eligible for Medicare, Medicaid, Military and other government sponsored coverage. Individuals enrolled in transitional and grandfathered plans will be allowed to maintain such coverage as allowed by federal regulations.

#### ***Small Employer***

Major medical health insurance coverage purchased by Small Group employers (i.e., employers with 2 to 50 employees) from health insurers, whether purchased directly from health insurers, through an agent or broker, or through the federal SHOP. This purchasing option is evaluated for an HIU if the primary or spouse is currently employed (i.e., under the age of 65) according to the employment information on the ACS record. The employer must be identified as offering health insurance coverage to employees for the HIU to evaluate employer-based coverage.

#### ***Large Employer***

Major medical health insurance coverage either purchased by Large Group employers (i.e., employers with more than 50 employees) from health insurers, whether directly or through an agent or broker, or administered by a third-party administrator (TPA). This purchasing option is evaluated for an HIU if the primary or spouse is currently employed and under the age of 65, according to the employment and demographic information on the ACS record; however, the employer must be identified as offering health insurance coverage to employees for the HIU to evaluate employer-based coverage.

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<sup>19</sup> <https://www.census.gov/programs-surveys/acs/about/top-questions-about-the-survey.html>

<sup>20</sup> <https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/response-rates/>

### *Medicare*

All individuals age 65 and older are assumed to be eligible for and enrolled in Medicare. Individuals eligible for Medicare are assumed to remain eligible for Medicare, and no other purchasing options are evaluated for them.

### *Medicaid/CHIP*

This purchasing option is evaluated if the requirements for Medicaid eligibility are met based on family income reported on the ACS record. This option is not evaluated for those receiving Military coverage as indicated on their ACS record, regardless of income.

It is important to note that not all individuals eligible for Medicaid or CHIP choose to enroll in such coverage. There are many possible reasons why an individual may choose not to enroll in Medicaid. A Government Accountability Office study found that many do not enroll because of the perceived stigma associated with filing for public assistance.<sup>21</sup> Others may choose not to enroll because they do not need access to medical services.

### *Other Government Coverage*

Other government coverage includes individuals who are enrolled in TRICARE and other military coverage types. HIUs are identified as being eligible for military coverage types based on the ACS data.

### *Short Term Limited Duration (STLD)*

Health insurance coverage purchased by HIUs from health insurers, whether purchased directly from health insurers, through an agent or broker. This purchasing option is evaluated for all individuals, except for those eligible for Medicare, Medicaid, Military and other government sponsored coverage.

### *Uninsured*

Residents who are not covered by any of the health insurance coverage types described above or have coverage that does not comply with the federal minimum essential coverage requirement are considered uninsured.

## ***Health status and expected health expenditures***

Health status is strategically assigned to various sub-populations based on a statistical analysis of self-reported health status obtained from the CPS. The CPS provides the starting assumptions for the population morbidity because the data includes a self-reported health status indicator as well as fields classifying income, age, gender, coverage type and other categories. Respondents to the survey classify their health into one of five categories: excellent, very good, good, fair, and poor. It is important to note that the CPS data lacks credibility for select cohorts by age and gender on a state level. As a result, the HRMM uses nationwide CPS data as the basis for assigning health status to state enrollees.

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<sup>21</sup> <http://archive.gao.gov/t2pbat4/150626.pdf>

The model reflects the CPS classifications numerically by assigning a morbidity load to each category. The morbidity load is applied to expected health expenditure calculated based on state, age and gender specific allowable claims from MarketScan database.<sup>22</sup> The estimated amounts reflect the expected health expenditure for each person in each modeled HIU.

### ***Synthetic insurers***

The HRMM assumes there will be one insurer in each of the individual, small group and large group health insurance markets. Information obtained from rate filings, the Supplemental Health Care Exhibits, and the Office of the Assistant Secretary for Planning and Evaluation (ASPE) were used to determine premium levels in the market and to assess the adequacy of the premium levels from 2016 through 2018.

For the individual market, the HRMM assumes the synthetic insurer offers silver metallic-level plans and one transitional/grandfathered plan. For metallic-level plans, the HRMM allows individual market enrollees to select the lowest cost silver plans available on the Individual Exchange. Premiums for other metal level plans have not been included in the HRMM. Premiums for the transitional/grandfathered plan are assumed to represent average benefit levels and are based on premiums obtained through rate filings. Additionally, premiums for the transitional/grandfathered plan are assumed to comply with the rating rules of non-ACA plans (e.g., full underwriting, etc.). Individuals modeled to take up individual health insurance coverage are randomly assigned to metallic or transitional/grandfathered coverage, with the distribution of enrollees consistent with the distribution of individual market enrollees observed in 2016 in aggregate and by income range and age group.

For the group health insurance market, the HRMM assumes the synthetic insurer offers one silver metallic-level plan and one transitional/grandfathered plan for small employer-based coverage. The silver metallic-level plan is based on the lowest-cost silver plan available in the Small Business Health Options Program (SHOP). Premiums for the transitional/grandfathered plan are assumed to represent average benefit levels and are based on premiums obtained through rate filings. Additionally, premiums for the transitional/grandfathered plan are assumed to comply with the rating rules of non-ACA plans (e.g., rating bands, etc.). Individuals working for small employers offering health insurance coverage are randomly assigned metallic or transitional/grandfathered coverage, with the distribution of enrollees consistent with the distribution of small group market enrollees by product type (e.g. metallic level) observed in 2016. For large employer-based coverage, the synthetic insurer is assumed to offer one plan that reflects market average benefit and premium levels. It is important to note that premium levels for a given employer-based group will be reflective of the modeled demographic and risk mix, using the demographic information from the ACS data and the assigned health status factors.

Premium levels for 2019 and beyond have been developed using a target loss ratio approach, and assumes the synthetic insurer will price to the following target loss ratios by market:

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<sup>22</sup> <http://truvenhealth.com/markets/life-sciences/products/data-tools/marketscan-databases>

Health Insurance Market	Traditional Loss Ratio
Individual	80%
Small Employer	80%
Large Employer	85%
STLD	50%

The traditional loss ratio for the Individual health insurance market have been adjusted in 2016 to account for the impact of the temporary federal transitional reinsurance and risk corridor programs.

### ***Calibration of the HRMM***

Once the current market landscape is known, the market migration module of the HRMM is calibrated to reflect the current market landscape. The calibrated market migration module projects the market into which HIUs will enroll, based on the options and corresponding premiums available to them.

The purpose of the calibration is to solve for the model parameters that replicate the characteristics (e.g., size, premium, claims cost, etc.) of the known insurance markets during the base period. This step is critical to ensure that the appropriate utility functions are utilized in the market migration module. While a utility function can model people’s desire for consumption of healthcare services, as well as their aversion to financial risk, it cannot predict certain behaviors, such as why people eligible to enroll in Medicaid do not enroll, or why individuals with sufficient financial means to purchase health insurance chose to be uninsured. It is because of these behaviors that the model calibration is important and necessary.

To perform this calibration, all the information resulting from the simulation module is considered except the known market in which the individual was enrolled in 2016 through 2018. Individuals with coverage through Medicare, military coverage and coverage through local, state or Federal government employers were excluded from the calibration, as individuals with these types of coverage are assumed to continue with those coverages throughout the projection. Individuals with Medicaid were also excluded because most individuals with this coverage are also assumed to continue to be covered by Medicaid.

For each of the remaining HIUs, the various coverage options available to them in 2016 through 2018 are examined and the utility associated with each option is calculated. If the primary and the spouse have access to employer-based coverage, the utility curves assume the HIU would select the lowest-cost premium option. The cost of individual health insurance coverage is calculated for each HIU, including HIUs that have access to employer-based coverage. HIUs with household incomes greater than the Medicaid income requirements are not allowed to evaluate the option of enrolling in Medicaid. Once an HIU has evaluated all premium options, the lowest premium is chosen, and the economic utility is calculated for that coverage and compared to the economic utility of being uninsured. The option with the greatest utility is selected and the HIU is assumed to enroll in that health insurance option.

The results were examined to ensure the appropriate number of people is simulated to have each type of current coverage (e.g., individual, small group, etc.). If the projected enrollment results did not replicate the known 2016 through 2018 distribution, the various parameters in the utility function were revised until the projected enrollment was consistent with the known enrollment at several key sub-population levels. This step is critical to the modeling as without such calibration the reliability of the results is diminished significantly. The model is calibrated to ensure the known market is replicated at several levels, such as by broad age and income ranges within various markets.

### ***Projection of future populations***

Once the model is calibrated, the model is ready to be used to project the markets into which individuals will enroll based on the coverage options available to them, and the resulting premiums for those markets. The process of determining which coverage option each HIU elects to enroll in is based on the application of economic utility maximization. Employer's coverage evaluation is performed for each year which premium data is known (i.e., 2016, 2017, and 2018). The employer's coverage decisions from 2018 are then assumed to continue in the future; however, the model will determine whether each HIU with employer-based coverage continues to meet the affordability requirement. The response from employers and individuals to changes in premiums and other financial incentives is a critical element of the model.

The model incorporates the various aspects of the ACA and other economic assumptions that will impact premiums and enrollment. These items include but are not limited to:

- Premium and cost sharing subsidies available to low income individuals
- Individual coverage mandate and penalties for not taking coverage (unless exempt)
- Medicaid eligibility rules by state
- Application of an affordability test to determine whether individuals offered employer coverage are eligible for subsidized coverage in the Individual Exchange
- Changes in FPL in future years
- Medical inflation
- Consumer Price Index for All Urban Consumers (CPI-U) growth consistent with the National Health Expenditure Data (NHED)
- Wage inflation is assumed to be consistent with CPI-U growth
- Income tax rates specific to the state including state, federal, FICA, and Medicare taxes
- Differences in utilization between individuals with insurance and similarly situated individuals without insurance
- Transitional health benefit plans are assumed to continually be extended each year
- Regulatory changes, specifically in the ACA individual market, for example:
  - Cost sharing reduction loading to Silver premiums starting in 2018, and
  - Expansion of Short Term Limited Duration plans, and
  - Individual mandate payments set to \$0 starting in 2019.

The resulting simulated population is input into the calibrated market migration module, and the purchasing decisions for each HIU are modeled each year from 2016 through 2020. Individuals currently enrolled in Medicaid or Medicare, those having coverage through the military and those receiving coverage because of being an employee or a dependent of an employee that works

for a local government entity or the state or Federal government are assumed to retain that coverage.

Incomes are assumed to increase with annual changes in the CPI-U, consistent with the statutory formula for projecting changes in FPL levels in Alaska, Hawaii and remaining states. Based on the income, family size and composition of each HIU, income as a percentage of FPL is calculated for each projection year. These FPL percentages are then used for:

- Determining whether the HIU is eligible for Medicaid or children within the HIU are eligible for CHIP
- Determining whether the HIU is eligible for premium subsidies within the Individual Exchange
- Determining whether the HIU is eligible for cost sharing subsidies within the Individual Exchange
- Determining whether the HIU is eligible for exemption from the individual mandate penalty if they elect not to enroll in coverage
- Determining whether the employer-sponsored coverage made available to the HIU is deemed “unaffordable” and as a result the HIU is eligible to enroll in the Individual Exchange and receive premium and potentially cost sharing subsidies

The market migration module evaluates several different options in which the HIU is eligible to enroll. The model calculates the utility for each one of these options. HIUs are only allowed to evaluate employer-sponsored coverage if they are currently enrolled in this market as the model does not assume new offerings of employer-sponsored coverage.

The potential options that are evaluated for each HIU (where eligible) include:

- All individuals in the HIU enroll in employer-sponsored coverage made available by the employer for the year modeled
  - Small employer groups offering transitional or grandfathered coverage will evaluate whether to switch to ACA compliant coverage based on the employer economic utility function, with the employee evaluating the selected premium amounts (net of employer contributions); please note, transitional plans are assumed to be continually extended each year
- All individuals in the HIU enroll in coverage within the Individual Exchange and receive premium subsidies and cost sharing subsidies, where applicable; the metal level purchased in the Individual Exchange will be based on the economic utility associated with the lowest-cost silver plans and if eligible CSR – variant plans
- All individuals in the HIU enroll in ACA compliant coverage with no subsidies; the metal level purchased will be based on the economic utility associated with the lowest silver plans
- All individuals enrolled in transitional or grandfathered plans enroll maintain their current coverage; please note, transitional plans are assumed to be continually extended each year
- All individuals in the HIU enroll in STLD plans for entire year subject to favorable health status

- All individuals in the HIU elect to remain uninsured

The HRMM assumes a steady state population. This means the distribution of the overall population by income, gender, health status, occupation, family size and other variables is assumed to remain relatively constant over the projection period. The steady state population assumptions can be summarized as follows:

- The distribution of the population by income level (i.e. as a percent of FPL) in aggregate remains unchanged. Incomes are modeled to increase each year based on salary inflation assumptions which are consistent with the change in CPI-U
- Significant migration of individuals of a specific age or gender into or out of each state is not assumed to occur
- The distribution of the overall population by health status, occupation, and family size are assumed to remain relatively constant through 2020, except for the impact aging of the population will have. The steady state assumption does not mean the health status of specific individuals will remain unchanged over time, only that the overall relative health status by specific subsets of the population (e.g., by FPL and age) do not change. However, as described below, we expect that people will move between various modes of insurance (e.g., small group, individual and uninsured) and that this migration will result in changes to the average morbidity of those markets. Similarly, the family composition of a given household may change; however, it is assumed that the overall distribution of the state's population by family composition does not change

The overall rate of employment over the period between 2019 through 2020 is assumed to be consistent with 2018 employment levels.

### ***HIU utility***

HIUs are assumed to make insurance purchasing decisions by evaluating the various options above and making an economically rational decision to select the option that maximizes the utility for the HIU. The utilities for all members of the HIU are aggregated to develop the corresponding utility for the HIU under that option. The HRMM assumes the decision to take up coverage is based on the utility of the HIU and does not allow individual members within an HIU to enroll in different markets, with one exception. Individuals eligible for Medicaid and Medicare are assumed to enroll in such coverage and have been removed from the decision-making process for each HIU.

To model this behavior, a utility function and the associated parameters were selected. As previously described, the utility function and parameters selected were those that replicated the status quo upon application of the market migration module to the simulated population. The underlying utility functions utilized are as follows:

$$U_{1,i,j} = -E(OOP_{i,j}) - Premium_{i,j} - r * VAR(OOP_{i,j}) + u * (H_{i,j}) + v_i$$

$$U_{2,i,j} = -w * E(HEP_{i,j}) - p * Penalty_{i,j} - w * r * VAR(HEP_{i,j}) + w * u * (H_{i,j})$$

## POTENTIAL IMPACT OF INVALIDATING THE ACA ON THE INDIVIDUAL MARKET

In the equations above,  $U_1$  represents the utility of having the health insurance among available coverage options and  $U_2$  represents the utility of being uninsured. If  $U_1$  is greater than  $U_2$ , the HIU selects coverage option  $j$ . If  $U_1$  is smaller than  $U_2$ , the HIU selects being uninsured. However, we apply an inertia factor in cases where the difference between utility value of prior year's option is only marginally different from the utility value of the new option. The inertia threshold is determined based on a percentage of the HIU's income.  $OOP_{i,j}$  is the out-of-pocket health care expenditures for HIU  $i$  under purchasing option  $j$ ,  $HEP_i$  represents the expected health care expenditures to be incurred if the HIU elects to be uninsured,  $r$  is the risk aversion coefficient,  $u$  is the perceived value of having access to health insurance,  $(H_{i,j})$  is the perceived value associated with consuming health services,  $v$  represents a fix value of having health insurance and  $p$  represents the perceived value of individual mandate payment under the ACA or state specific mandate requirements.

In calibrating the model, we elected to vary the parameters  $r$  and  $u$  at seven different ranges of incomes to reflect the fact that individuals with higher incomes are more risk averse and have different perceptions of accessing health care services. We also varied the parameters for six different age ranges to reflect the fact that individuals with similar incomes may behave differently at different ages. For example, an early retiree with greater accumulated assets drawing income from a lifetime of investments may be more risk averse than a young individual with a similar income but more limited assets. We also applied a separate parameter  $w$  for health expenditure for HIUs between Group and Individual coverages to account for higher perceived cost of not having comprehensive Group coverage versus leaner coverage usually available in the Individual market.





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