

The Actuarial Challenge: Final Results

Sponsored by the Robert Wood Johnson Foundation

Managed by Milliman, Inc.

Announcement of Final Results

INTRODUCTION

The Actuarial Challenge, sponsored by the Robert Wood Johnson Foundation (RWJF), brought actuaries together to explore approaches to stabilize the individual health insurance market. The Challenge is administered by Milliman, Inc. and actively promoted by the American Academy of Actuaries and the Society of Actuaries. Support for the Actuarial Challenge is being provided by the Robert Wood Johnson Foundation. The views expressed herein and in the submitted papers do not necessarily reflect the views of the Foundation, Milliman, the American Academy of Actuaries, the Society of Actuaries, or the employers of the Challenge participants.

The Challenge consisted of two rounds. Round One involved each of the participating teams developing a preliminary paper presenting a proposal of various ways in which the individual health insurance market could be reformed. The proposals were not intended to be comprehensive, but to offer ideas on different ways to improve certain aspects of the current system. The focus is just the Individual Health market. Other markets could be affected by the proposed reforms, but such impact was generally beyond the scope of the analyses.

A panel of five judges reviewed each paper on a blinded basis and ultimately selected five papers to move on to the next round. Round Two involved the selected teams working with Milliman to model their proposals to illustrate the potential financial impact on the individual health insurance market. The modeling has now been completed, and each team has submitted a final paper incorporating the modeling results. This report presents a summary of those results. The final papers can be found on the Actuarial Challenge website at <http://challenge.actuary.org>.

Also during Round Two, each team that submitted a Round One paper had the opportunity to refine its proposal. Those papers, in addition to five Round Two papers, have been published for public consideration and discussion. The five papers selected by the panel of judges for Round Two modeling are:

1. Why Not BE HIP? (BE HIP)
2. Carrot Flowers
3. Improving the Individual Market (IIM)
4. Panoptic
5. Simplifiers

A brief description of reform proposals of each paper and the name of each team leader(s) are presented after the Round Two Modeling Results section. Contact information for each leader can be found in the [Actuarial Directory](#) by entering their last name. The reader should see each specific paper for a more detailed description of its proposal and a discussion of its financial results.

ROUND TWO MODELING RESULTS

Results for each of the health care reform proposals presented in the five Round Two papers are shown and discussed in this section. The authors were challenged to elicit innovative ideas and proposals to move the individual insurance market further toward the goal of universal access to quality health services and providers in a financially secure and stable way with consideration of the costs the solution places upon individuals, health plan issuers, health care providers, taxpayers, employers, and other health sector stakeholders. As such, this summary examines how well these goals were achieved by looking at resulting impacts on consumers (insured Individual Market members), health plan issuers (insurers), health care providers, employers, and funding sources (taxpayers, government, or alternative funding sources).

Consumers – The Uninsured and Individual Market Enrollment

Table 1 compares the change in the number of people uninsured under each proposal from the status quo baseline scenario. It shows the increase in individual market enrollment as a result of each proposal.

Table 1 Increase in Consumer Counts from Baseline Scenario (millions)					
	BE HIP	Carrot Flowers	IIM	Panoptic	Simplifiers
Uninsured Count	-24	-2	-24	-24	-24
Individual Market	14	2	14	14	16

All five proposals meet the goal of reducing the number of uninsured people, with four of the five scenarios modeled to move all currently uninsured people into some coverage market, most of whom get coverage through the individual market, although some move to employer group or Medicaid coverage if eligible. The significant movement from the ranks of the uninsured is due primarily to much steeper penalties for not enrolling such that it would cost a person as much or more to not enroll. In some cases these penalties are accompanied by an auto-enrollment system and / or more generous premium and benefit subsidies to make coverage more affordable. We recognize that even with such provisions a number of individuals will still choose to go without health care coverage, but for modeling purposes this 100% migration assumption was used for these four proposals since the distinctions between them were not readily measurable.

The Carrot Flowers proposal shows far less migration of the uninsured to a health plan. It does not include severe non-enrollment penalties, but does include more generous subsidies and health care benefits (a carrot approach). It is certainly possible that many more uninsured could enter a health plan coverage market, especially since this proposal does significantly lower the out-of-pocket costs to those insured in the Individual Market.

Consumers – Out-of-Pocket Obligations

Table 2 compares the change in out-of-pocket obligations for insured individuals under each proposal from the status quo baseline scenario. These obligations include the member's share of the premium rate after subsidies, the cost-sharing of the costs of health care services such as deductibles, copayments,

and coinsurance, and any tax benefits received as a result of their premium rates becoming tax deductible.

Table 2					
Increase in Member Out-of-Pocket Obligations from Baseline Scenario					
Per Member Per Year (PMPY)					
	BE HIP	Carrot Flowers	IIM	Panoptic	Simplifiers
Premium Out-of-Pocket	-\$288	-\$1,250	-\$1,465	-\$1,466	-\$2,488
Cost-Share Out-of-Pocket	-\$33	-\$13	-\$526	-\$358	-\$63
Income Tax Deductibility	\$0	\$0	\$0	-\$194	\$0
Total After-Tax Obligations	-\$321	-\$1,264	-\$1,991	-\$2,018	-\$2,551
% Change	-6%	-22%	-35%	-35%	-45%

All five proposals also meet the goal of reducing out-of-pocket costs for consumers. Most of these reductions bring very significant savings for members. The cost reductions are achieved in different ways. Key to a few of the proposals is reducing reimbursement levels at which health care providers are paid. IIM sets the reimbursement fees at Medicaid levels; Simplifiers sets hospital facility charges at Medicare levels; and Panoptic uses a reference fee schedule approach to achieve lower average allowed costs.

They all continue some form of direct premium subsidy or tax credit and some form of benefit subsidy. BE HIP and Carrot Flowers have more generous premium subsidy formulas than the ACA to achieve their reductions in out-of-pocket premiums for consumers. They also have various benefit subsidies available to drive down out-of-pocket costs. Some of the reduction in average premium is also due to the allowance for health care plan designs with actuarial values less than the current ACA minimum of 60%. The Simplifiers achieves significant premium reduction through a major reinsurance or cost-sharing program funded by the government. Panoptic also changes the tax code to allow the member's out-of-pocket premium to be deductible for income tax purposes.

Health Plan Issuers

Table 3 compares changes to the average gross premium rates and other benefit plan features.

Table 3					
Increase in Health Plan Gross Premiums and Actuarial Values from Baseline Scenario					
	BE HIP	Carrot Flowers	IIM	Panoptic	Simplifiers
Avg. Gross Premium PMPY	\$325	\$228	-\$2,550	-\$2,160	-\$4,515
% Change in Avg. Premium	5%	3%	-38%	-32%	-67%
Avg. Plan Actuarial Values (AV)	5%	4%	-3%	-7%	-9%

Average gross premiums are reduced significantly for IIM, Panoptic, and Simplifiers, while they increase for BE HIP and Carrot Flowers. The increases for these two proposals are largely due to offering richer benefit plans on average, as indicated by their increases in plan actuarial values. The other three allow health plans to offer benefit designs lower than the current 60% minimum AV required by the ACA, which

helps explain their lower average AVs. The average leaner benefits though only are a small part of the total premium reduction. These reductions are largely funded through government programs (premium and benefit subsidies and reinsurance), health care providers through lower fee schedules, and, in the case of Panoptic, through risk adjustment program transfers from the small group market.

Due to the significant cuts in average PMPY premiums that the health plan receives in the case of IIM, Panoptic, and Simplifiers, the amount of retention dollars each collects out of those premiums becomes an issue. Under the ACA, health plans must have at least an 80% medical loss ratio (MLR). While the MLR calculation allows for some expenses to be treated as claims dollars, the vast majority of general and administrative expenses (G&A) need to be covered by the other 20% of premium. Significant premium reductions can mean significant reductions in the amounts available for covering G&A. While the significant increase in the number of members produces increases dollars available for G&A, the growth may not be sufficient to cover all the variable expenses required to service the membership. This may necessitate the health plan operating at less than the current 80% minimum MLR. Each of these three proposals allow for lower MLRs. Table 4 presents for each proposal the average MLR and the resulting change from the baseline scenario in G&A retention in total dollars available, on a PMPY basis, and the retention as a percentage of gross premium.

Table 4					
Change in Health Plan Average Retention from Baseline Scenario					
	BE HIP	Carrot Flowers	IIM	Panoptic	Simplifiers
Medical Loss Ratio	80%	80%	70%	75%	64%
Retention Change - Total Dollars (billions)	\$21	\$4	\$17	\$12	\$3
Retention Change - Per Member	\$60	\$70	-\$80	-\$216	-\$557
Retention as a % of Premium	20%	20%	30%	25%	36%

BE HIP and Carrot Flowers were projected to continue to operate at an 80% MLR or 20% retention level. Total dollars of retention increased far less for Carrot Flowers because its member count did not increase significantly compared to the other scenarios. Its modest increase was generated by its member growth and the 3% change in gross premium rates. Simplifiers generated even less increased total retention dollars, despite the significant growth in membership and reducing its target MLR to 64%, due to its sharp reduction in average gross premium rates. IIM and Panoptic also reduced their target MLRs by 10% and 5%, respectively, to generate enough retention dollars to service the increased membership.

Health Care Providers

Table 5 compares the changes from the baseline scenario in revenue paid to health care providers. These results only include the impact for those patients who have coverage in the Individual Market. The baseline scenario results being compared include provision for an estimate of the revenue that providers were receiving from the people who were previously uninsured under the baseline scenario and moved to the individual market.

Table 5 Increase in Health Care Provider Revenue from Baseline Scenario					
	BE HIP	Carrot Flowers	IIM	Panoptic	Simplifiers
Total Fees Reimbursed (billions)	\$71	\$4	-\$28	\$39	-\$5
Change in Revenue as % of Baseline	42%	3%	-17%	23%	-3%
Total Fees Reimbursed PMPY	\$2,261	\$170	-\$956	\$1,247	-\$382
% Change in PMPY Revenue	44%	3%	-18%	24%	-7%

Health care providers increase their revenues under all but the IIM and Simplifiers scenarios. The increases are significant for BE HIP and Panoptic (although Panoptic results are not as great when its merged Individual / Small Group market are considered). The loss of revenue is significant under the IIM scenario due to the requirement of reimbursing providers at Medicaid fee levels. Similarly, although not as pronounced, provider revenue decreases under the Simplifiers scenario due to the requirement of paying hospital facilities at Medicare fee schedule levels. It should be noted that the changes in revenue shown represent a relatively small percentage of total revenue over all markets (a range of 0% to 2%).

Funding Sources - Taxpayers, Government, or Other Sources

Table 6 compares the changes in funding outlays needed from sources other than those discussed above, primarily government funds ultimately paid for by taxpayers, from those estimated under the baseline status quo scenario.

Table 6 Increase in Funding Sources (e.g., Government) from Baseline Scenario					
Funding Need	BE HIP	Carrot Flowers	IIM	Panoptic	Simplifiers
Premium Subsidies (billions)	\$61	\$34	\$6	\$19	-\$23
Benefit Subsidies (billions)	-\$7	-\$7	-\$4	\$20	-\$7
Preventive Plan (billions)	\$0	\$0	\$0	\$0	\$7
Reinsurance (billions)	\$0	\$0	\$0	\$0	\$49
Premium Tax Deductibility (billions)	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$6</u>	<u>\$0</u>
Grand Total (billions)	\$54	\$27	\$2	\$45	\$26
Total Change as a % of Baseline	93%	46%	3%	77%	44%
Total per Indiv. Market Member	\$223	\$1,088	-\$1,386	-\$68	-\$789
Change per Member as % of Baseline	7%	34%	-43%	-2%	-24%

There are increases in total funding needed from sources other than those discussed above, whether from government or other sources, required under all five scenarios, although relatively very small under the IIM proposal. However, when viewed on a per member basis for those in the Individual Market, the results are mixed. There are increases for the BE HIP and Carrot Flowers proposals on a per member basis, while the other three scenarios show decreases.

Employers

Employers are affected by these reforms in the following ways:

1. Some of the uninsured may opt to enroll in the health plans offered by their employers when reforms are implemented to cover virtually the entire uninsured. The model indicates a 3% increase in group membership for all but the Carrot Flowers scenario. This will add cost to the employers since they usually contribute a significant share of the plan premium.
2. The models assume that anyone (including dependents) who is eligible for a group plan will not be eligible to enroll in the Individual Market. If this is not the case, to the extent that premium rates after subsidies in the Individual Market are less than the employee share of the group premium, there may be employees and dependents who would move to the Individual Market. This would likely lower total costs for the employers, but increase costs for the Government or other funding sources due to the additional subsidies it would need to pay. It would be more likely that dependents might move to the Individual Market from the Employer Group Markets.
3. Without a strong employer mandate, there is a stronger likelihood that some employers would terminate their plans and send their employees to the Individual Market. This would again increase total costs for the Government or other funding sources and possibly put more pressure on health care providers if the members in the Individual Market as a percentage of the total population increased significantly, depending on the provider reimbursement basis.
4. The Simplifiers proposal includes a government-funded Preventive Plan for both individual market and group market members. Employers will benefit from this plan paid for by the Government (taxpayers). Not needing to cover these services will reduce benefits and premiums the employer will need to pay. To the extent that they have been providing equivalent preventive care benefits, this represents an average \$29 billion in annual savings for group plans under the Simplifiers proposal (this amount has not been included in Table 6).
5. The Panoptic proposal calls for the merging of the Individual Market with the small group market (defined to consist of firms with up to 100 employees). This creates a single risk pool for both pricing purposes and risk adjustment program administration. Premium rating rules allow differentiation by group size, which effectively enable the individual market to be rated somewhat differently than the small group market, albeit still based on the same risk pool experience. However, the small group market was projected to be responsible for paying a risk adjustment transfer of an average \$15 billion per year over the three-year period 2018-2020 to the individual market. However, the small group market also shares in the lower provider reimbursements assumed for this scenario, to its benefit slightly more than offsetting this transfer.
6. The employer group market may fall victim to cost-shifting under the IIM and Simplifiers proposals due to provider revenue reductions in the Individual Market.

None of these impacts on the Group market are reflected in the above tables since the focus is on the individual health market. However, these are impacts that may affect the employer group market.

ROUND TWO PROPOSALS – DESCRIPTIONS

This section provides a brief description of each of the five modeled proposals. You can find their detailed proposals on the Actuarial Challenge website at <https://challenge.actuary.org>, (which is hosted by the American Academy of Actuaries). Also shown are the names of the team leader(s) of each paper. Contact information for each leader can be found in the [Actuarial Directory](#) by entering their last name.

Why Not BE HIP?

Team Lead: Rebecca Kander

Establishes a nationwide Basic Essential Health Insurance Plan (BE HIP) covering a core set of services / benefits set by federal regulation. Allows purchase of state regulated standardized supplemental plans (benefit riders) to offset cost sharing (i.e., upgrade to richer benefits). Automatic enrollment and / or penalty of full cost of basic plan if not enrolled. Uses a risk adjustment program and reinsurance to protect insurers. Premium equalization process to account for socioeconomic variations between insurers in a given market. Premium subsidies use similar methodology as the Patient Protection and Affordable Care Act (ACA), although percentages may differ.

Carrot Flowers

Team Lead: Brian Tajlili

Creates three pools in the individual market: (1) Over 250% FPL (federal poverty level) with state regulated underwritten market, (2) Under 250% FPL with federally funded underwritten and subsidized market, and (3) Special Needs (High Risk) Pool with a federally-funded, highly-subsidized market for individuals with persistent high costs or uninsurable conditions. Guarantee issue, but requires continuous enrollment. Incentivizes providers to manage care. Encourages tax parity between individual and group market by capping group tax deductions. Allows more tax-favored health savings account contributions.

Improving the Individual Market

Team Lead: Jim Kohan

Revises rating to allow a wider premium range by age (5-to-1) and limited consideration of an enrollee's health status in setting premium rates via an automated process (up to an additional 50% of premium). Uses contributions to individual health savings accounts for mid / low income consumers to replace premium and cost sharing subsidies. Revises risk adjustment methodology and restores a reinsurance mitigation program. Uses Medicaid reimbursement levels and increases health cost transparency. Increases penalties for not obtaining health insurance, but allows more benefit plan design flexibility. Reduces mandated benefits based on scientific evidence and use of an independent board. Incentivizes payment reform, integration of health care information, implementation of clinical best practices, and value-based care.

Panoptic

Team Leads: Emily Bartel and Rod Turner

Uses auto enrollment into newly defined catastrophic plans to enforce participation, and combines the individual and small group markets (with no self-funding allowed in the small group market). Consumer can add benefits through purchase of supplemental benefit riders. Block funds for subsidies provided from federal to state for the state to administer. Elimination of dual regulation to reduce expenses. Allows wider rating for age (5-to-1) and lowers or eliminates minimum medical loss ratios. Continues risk adjustment and restores reinsurance for up to five years. The equivalent of cost-sharing reduction (CSR) funds would be deposited into a consumer's health savings account (HSA), if eligible. Use reference-based benefit pricing for provider fees. Encourages risk contracting with both upside and downside risk to the provider. Eliminates direct-to-consumer advertising. Eliminates grandfathered and transitional business. Focuses on consumer accountability by providing consumers with improved cost transparency and other resources to help them make educated decisions regarding their health care.

The Simplifiers

Team Leads: Sharon Leach and Liz Leif

All residents receive a fully publicly-funded preventive plan and must purchase an insurance plan for non-preventive services. Insurers must offer a standard plan but may offer additional plans subject to state regulations such as actuarial soundness, minimum coverage levels and loss ratios. Premiums will be limited to significantly lower and more affordable levels. A simplified, permanent publicly-funded risk mitigation program based on reinsurance formulas will result in reduced premium. Hospital costs will be reduced by payment at Medicare reimbursement levels. Drug costs will be lowered by allowing purchase from qualified international locations. Simplified low-income premium discounts will be available. Penalties equal to the lowest cost insurance plan will apply for non-coverage. Lifetime universal Medical ID cards will be used to monitor enrollment, provide electronic medical records, and act as low-interest credit cards to pay for premiums and out-of-pocket medical expenses. Exchanges will act simply as informational websites.

OTHER PROPOSALS

Nine other teams also submitted papers for the Actuarial Challenge. While unfortunately we could not model all of the entries, these papers also offer health care reform ideas that add to the discussion of ideas on how the Individual Market can be improved and stabilized. Each of these papers can also be found out on the Actuarial Challenge website. Following is a high-level summary of each of these other papers (in random order):

The Mod Squad

Team Lead: Jeffery Rykhus

Increases incentives to first-time enrollees, but with significant penalties for not obtaining coverage after first year (150% of lowest cost Silver plan). Extreme marketing blitz required for first year program. Institutes concurrent payment of penalties during coverage year using cell phone bill for both premium and penalty billing. Includes all individuals not eligible for Medicaid in the Individual market and prohibits withdrawal of Medicaid expansion. Creates wellness / healthy living premium subsidy and optional pharmacy coverage within ACA plans. Modifies rating to allow wider premium range for age (5.5-to-1.0). Eliminates grandfathered and transitional plans. Modifies medical loss ratio and COBRA requirements. Increases availability of premium subsidies to 600% of FPL for those in more expensive markets and areas. Restores reinsurance and risk corridor mitigation programs and requires proposed risk adjustment changes. Creates trust fund for risk corridor payments to insurers and for other federal ACA expenditures. Addresses primary care doctor shortage. Individual premiums become tax deductible to be consistent with tax deductibility of group insurance premiums.

JHU Actuarial Club

Team Lead: Scott DeLawder

Provides enhanced benefits (e.g., gym membership, fitness classes, preventive services, etc.) in insurance coverage to encourage younger individuals to purchase. Allows health insurance plans to segment coverage of specific services to lower cost. Transforms premiums from yearly cost to longer term policies with investment opportunities and increases annual penalties for not obtaining insurance. Closes coverage gaps by expanding Medicaid, covering non-citizen immigrants, and requires more employers to cover employees. Requires health service pricing transparency.

Healthy Behavior Incentive (“HBI”) Plans

Team Lead: Eric Unger

Healthy Behavior Incentive Plans encourage a partnership between the insured, insurer, and health care provider to maintain well-being rather than just reimbursement for expenditures. They allow use of age-specific premium discounts upon a member’s policy renewal, based on health / lifestyle choices and improvement in health status over time.

Incentive plans focus on rewarding choice-based improvements to health status, not just winners of the genetic lottery. Improvements are validated not by insurers but by trusted providers, who partner with members on their individual journeys to better health and a long-term reduction in the cost of care.

Both the proposed discounts and the proposed incentive behaviors may be a part of the state DOI's existing annual premium review, where they may be modified or rejected. But the market ultimately determines which behaviors are most effective at reducing claims costs, since insurers need not offer them and members need not buy them.

Underwriting and Premium Rating using Risk Adjustment

Team Lead: Karan Rustagi

Focuses on improving market stability through increased enrollment of lower cost individuals by revising the rating basis to better align with expected costs. Uses uniform prospective risk scoring to place all insureds into health status rating bands. Consumers pay up to a sliding scale percent of income with subsidies filling in the difference. Additional subsidies for cost sharing applied to low income insureds. Guarantee issue with state-based assessments across insurers to help fund subsidies for highest rating bands. No individual mandate, but a reentry penalty for those who drop coverage and reapply. Every insurer must offer a state-designed benchmark plan, but no restrictions on benefit designs for other plans. Requires a funded HSA for a consumer to choose a high out-of-pocket plan. There would be no federal exchanges and no reinsurance or risk corridor programs, but would use a prospective risk adjustment program. Insurers work directly with states.

Team DC

Team Lead: Dave Carlson

Increases individual market penalties to encourage more enrollment by young and healthy uninsured, and mitigate developing anti-selection spiral in the individual market. Refine / extend federal government-funded backstop to insulate insurers from developing market, analogous to backstops for catastrophic losses in flood, earthquake, and severe windstorm markets. Argues that broader health care / health insurance economics and function will be improved, with benefits for the employer-provided and individual markets, by keeping / implementing / extending the Cadillac plan provisions / penalties in the group market.

Team ACA Version 2.0

Team Lead: Mischelle Schweickert

Proposes changes to the subsidy and risk adjustment programs. In order to address the cliff created at the 400% FPL subsidy level, proposes extending the poverty threshold and providing a more tapered reduction of subsidies. In addition, considers the possibility of incorporating local income levels to account for varying cost of living across the nation. For the risk adjustment program, proposes modifying the metallic-specific risk factors to more closely align to actual experience, thus reducing the extreme variation in risk adjustment (RA) transfer at the different metal levels. Finally,

proposes using market-level paid claims per member per month (PMPM) instead of premium PMPM to better balance recoveries.

A Social Insurance Solution To Health Care Finance

Team Lead: Eric Klieber

Proposes to use a social insurance model to replace all current health insurance (across all markets). Covers all legal residents in the program through a payroll tax for funding. Insurance plan would cover preventive care and catastrophic care (exceeding 7.5% of income). Low income families would receive additional assistance similar to Supplemental Nutrition Assistance Program (SNAP) benefits. Routine care would be funded by individuals, but administered through a central fund, billing patients as with a credit card. Administrators must negotiate with providers, but must make all fees available to the public.

Consulting Actuaries for Sustainable Healthcare

Team Lead: Joan Ogden

Insurance Reforms to improve actuarial soundness

- Medicaid in all states <138% FPL
- Basic Benefit Plan, using Medicaid reimbursement: 138% - 200% of FPL
- Auto-enroll uninsured into Basic Benefit Plan when care needed; additional deductible of up to 12 months premiums
- 50% minimum actuarial value
- Eliminate metal levels
- Subsidies if premiums for 50% actuarial value (AV) plan >10% MAGI (modified adjusted gross income)
- Guaranteed issue for up to 10% plan value increase, at renewal
- Actuarially sound rating for age, gender, and health status (within $\pm 20\%$)
- Adult children rated same as non-dependent adults
- National reinsurance for 90% of claims exceeding \$250,000

Provider Price & Quality Reforms, to address unsustainable underlying health care spending

- All private fee-for-service (FFS) patients charged same
- Fees publicly available
- Billed charges = negotiated fees
- Pro-active fraud avoidance
- Direct-to-consumer (DTC) advertising restrictions
- Remove barriers for non-physician health care professionals
- Rigorous certificates of need
- Computer assisted diagnoses
- Expanded standards of practice
- Expanded medical homes
- Standardized electronic health records (EHRs), patient owned

True Health

Team Lead: Ken Beckman

Develops actuarial incentive compensation for physicians who are effective at addressing the underlying cause of patient health conditions by using the “food as medicine” concept, which has been proven to not only prevent, but reverse the chronic costly conditions faced by Americans today (including heart disease, diabetes, high blood pressure, and obesity) without any negative side effects at minimal cost. Currently, the vast majority of the population and even many in the medical and insurance fields are unfamiliar with this concept. This solution seeks to increase awareness of this approach on a much wider scale and change provider reimbursement to make treatment using this concept an option for everyone. A successful implementation of this proposal would result in lower premiums and increased access to the individual health insurance market. It would also serve as a model for the group, self-insured, Medicare, and Medicaid markets.

ABOUT THE MILLIMAN HEALTH CARE REFORM FINANCING MODEL (HCRFM)

The Milliman Health Care Reform Financing Model (HCRFM) was developed by Milliman, Inc. (Milliman) to assist clients with an assessment of the potential impact of particular health care reform changes to be evaluated. The HCRFM simulates on a seriatim basis the potential costs and movements of individuals and the interaction between competing medical cost payers and consumers within and between the various insurance markets that comprise the U.S. health care system for a given proposed health care financing scheme. For more information about the HCRFM see the Actuarial Challenge website at <http://challenge.actuary.org/content/financing-model> or contact your Milliman consultant.

CAVEATS AND LIMITATIONS OF USE

The modeling results presented in this summary represent a high-level analysis of the authors’ proposed reforms to the individual health care market. This modeling was performed using Milliman’s HCRFM adjusted to reflect the proposed insurance financing reforms. When considering the results, the following should be kept in mind:

- While the authors incorporated financial modeling results generated through use of Milliman’s HCRFM simulation system, the modeled market changes are solely those proposed by the authors. The authors also provided to Milliman certain underlying assumptions to model various proposed provisions. Milliman has tried to be consistent in its selection of modeling assumptions for all five Round Two papers.
- The Actuarial Challenge is funded by the Robert Wood Johnson Foundation, managed by Milliman, and promoted by the American Academy of Actuaries and the Society of Actuaries. The views expressed in the submitted papers do not necessarily reflect the views of the Foundation, Milliman, the American Academy of Actuaries, the Society of Actuaries, or the employers of the Actuarial Challenge participants. The use of the Milliman HCRFM system and involvement of its personnel in conducting the modeling should not be viewed as an endorsement by Milliman of the reforms proposed by the authors.

- Multiple data sources were relied upon to calibrate the baseline for the analysis and develop assumptions for each modeled scenario. In some instances, the data had gaps in information or indicated conflicting or inconsistent results, which required the modelers to make an assumption to bridge such differences. In those instances, information available was used, as well as the modelers' experience and judgment in setting assumptions. The analyses are based upon Milliman's understanding and interpretation of the Affordable Care Act (ACA) and its related regulations as they existed at the time of development of the baseline status quo scenario. The results are also subject to the limitations of the model in being able to adjust for every aspect of the ACA and the proposal being modeled. The modeling results reflect Milliman's understanding of each proposal.
- Reform projections reflect differences in provider reimbursement and / or utilization anticipated based on external sources and judgment based on experience with actual pricing in various markets.
- The impact of changes to provider reimbursement levels are not fully considered herein since potential ramifications of reimbursement changes such as provider cost-shifting to other markets and manufactured increased utilization to compensate for unit cost reductions have not been modeled. Furthermore, the breadth of provider networks and appropriate health care provider access has been assumed to be adequate. These are important caveats when assessing the validity of the reform impacts indicated in this report and in each paper.
- Expected migration between markets is based on calibrated historical movements and judgment. The migration assumptions vary by several population characteristics such as age, gender, health status, and income level. Choice of health plan also considers the relative out-of-pocket premium rates presented to each family unit. Therefore, the final impact is influenced by changes in the projected mix of these characteristics over time.
- The analyses uses data reflecting the difference in starting costs between individual health insurance eligibility categories. To the extent the risk characteristics of these populations are different than implicitly assumed and alter utilization or other influences, results may be different.

These are illustrative results. A more detailed analysis of these proposals or any aspect of these proposals would likely differ from the results presented.

The HCRFM is an actuarial projection system focused on the insurance coverage provisions of the proposals. It is not an econometric model that considers non-insurance related economic aspects that may indirectly affect or be impacted by the reform changes. While the analysis estimates funding needed related to the insurance programs for any proposed reforms, it did not recognize any tax or funding impacts on results as part of the analysis, as this was outside the scope of the modeling parameters. These analyses are not a substitute for the type of economic cost scoring that the Congressional Budget Office (CBO) performs.

It was assumed individuals would adjust their coverage annually consistent with the choices available to them at the beginning of each calendar year, as applicable. Different assumptions are possible that could impact results substantially depending on what options were made available or the expected individual reaction to offered options.

No change in the general health status of the current individual market population was explicitly reflected as part of the analyses. However, when people in one market migrate to another market, the resulting average health status will reflect the combined health status of the underlying populations.

The modeling results are intended to provide illustrative impacts of the proposed health care financing reforms to the Actuarial Challenge authors. The results of the analysis are projections, not predictions, and they are dependent upon the sets of assumptions that are used. The results are likely to vary if a different set of assumptions is used. It is almost certain that future experience will not exactly conform to these projected results. As expected for as complex a system as the U.S. health care system, changes in some assumptions can produce significant changes in results, due to the interrelationships of factors and the uncertain nature of predicting market behavior influencing the results. The interaction of consumers, issuers, providers, and regulators strongly influences the choices made in the individual market. Results may also differ from other analyses Milliman may perform due to differences in the timing of model updates, assumptions, and additional information that may be gathered and learned since these analyses were performed.

The results are not to be relied on for any pricing or experience analysis. The modeling results were used by the authors to augment their Actuarial Challenge papers with high-level impacts. They should not be used for any other purpose. Any conclusions or recommendations presented in the Actuarial Challenge papers are solely those of the authors.

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