

MILLIMAN CLIENT REPORT

State policy options to reduce ACA individual marketplace premiums

A cost and benefit comparison

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Introduction

Since Patient Protection and Affordable Care Act (ACA) individual marketplace reforms first took full effect in 2014, the cost to purchase individual comprehensive health coverage through ACA-compliant qualified health plans (QHPs)¹ has risen by 75% for consumers (e.g., individuals and families) whose household incomes disqualify them for federal premium assistance in the form of advanced premium tax credits (APTCs).² This rise in premiums is in addition to increases in consumers' out-of-pocket medical costs, as plan deductibles and out-of-pocket limits have risen along with claim costs.³ The cumulative rise in premiums (and out-of-pocket costs) since 2014 has made the cost of coverage unaffordable for many unsubsidized consumers, leading many—particularly those in good health—to decline to purchase or renew coverage. While recent rate actions provide some cause for optimism (the average 2020 benchmark silver premium across the nation has declined slightly since peaking in benefit year 2018),^{4,5} the cost of coverage remains high and out of reach for many of these unsubsidized consumers. In recent years, state governments and the policy makers that represent them have begun exploring policy options to address this situation and improve access to affordable care for their constituents.

Milliman was engaged by Centene Corporation, a managed care organization that offers individual marketplace coverage under the ACA, to evaluate several options available to state policymakers to reduce the cost of coverage in individual marketplaces. Each policy type under consideration would reduce the cost of coverage, primarily for consumers ineligible for federal subsidies, and encourage issuer participation in state marketplaces through the targeted injection of state funds and as applicable the redirection of federal funds. In order to inform our conclusions regarding each policy scenario, we performed an independent, actuarial analysis simulating the impact of each scenario on premium levels and issuer financials for various representative state individual ACA marketplaces. The three policy types evaluated in this report were outlined by Centene Corporation and the scope of the report was determined collaboratively. The analysis and conclusions were prepared by Milliman independently and are solely attributable to the authors of this report.

This report details the results of our analysis, examines potential advantages, disadvantages, and trade-offs of each policy option with respect to various stakeholder perspectives and objectives (summarized in the executive summary on the following pages). We also examine key considerations state policymakers must address when designing and implementing one or more of these policies. At a high level, traditional reinsurance drives the largest decrease in volatility for issuers, uniform coinsurance reduces unsubsidized enrollees' average cost of coverage the most, while wraparound subsidies reduce the minimum cost of coverage the most for unsubsidized enrollees. These impacts are explored in greater detail in this report.

While we discuss various considerations with respect to potential market policies, Milliman is not advocating any particular policy position, nor does this report represent a recommendation for any specific action by state policy makers or other market stakeholders.

¹ For the remainder of this report, all references to individual coverage can be interpreted as referring to ACA-compliant comprehensive major medical individual market coverage through QHPs, both on and off-marketplace, except where we explicitly note otherwise.

² Kaiser Family Foundation. Health Insurance Marketplace Calculator, 2014-2019. Retrieved November 8, 2019, from <https://www.kff.org/interactive/subsidy-calculator-2019/>.

³ Kaiser Family Foundation. Cost-Sharing for Plans Offered in the Federal Marketplace, 2013-2019. Retrieved November 13, 2019, from <https://www.kff.org/slideshow/cost-sharing-for-plans-offered-in-the-federal-marketplace-2014-2019/>.

⁴ Kaiser Family Foundation. Average Marketplace Premiums by Metal Tier, 2018-2020. Retrieved November 8, 2019, from <https://www.kff.org/health-reform/state-indicator/average-marketplace-premiums-by-metal-tier>.

⁵ Milliman. Has the ACA Death Spiral Kicked the Bucket? Retrieved November 20, 2019, from <http://www.milliman.com/insight/2019/Has-the-ACA-death-spiral-kicked-the-bucket/>.

Executive summary

POLICY OPTION EVALUATION

Using a simulation model powered by nearly one million lives of individual ACA data, we evaluated three categories of premium reduction policies that states may consider employing to reduce the cost of coverage. Each policy that we evaluate in this report reduces marketplace premiums through the injection of the same amount of state funds and (as applicable) the redirection of federal funds into the individual market, but differs with respect to how and to whom these funds are distributed.

1. **Traditional reinsurance:** State funds and federal Section 1332 State Innovation Waiver (1332 waiver) pass-through funds are used to reimburse health plans for a percentage (coinsurance) of enrollees' annual claim costs between an attachment point and a specified maximum or cap.
2. **Uniform coinsurance:** In this variation on traditional reinsurance, state funds and federal 1332 waiver pass-through funds are used to reimburse health plans for a percentage (coinsurance) of claim costs, *starting from the first dollar incurred*, up to an optional specified annual maximum per enrollee.
3. **Wraparound PMPM subsidies:** This policy, which requires a state-based marketplace⁶, uses state funds to extend premium subsidies that "wrap around" the federal subsidy structure and reduce per member per month (PMPM) premium costs at the point of sale for consumers either ineligible for APTCs or who only receive limited federal premium assistance. For this report, we modeled a "defined contribution" subsidy in which the amount of the state subsidy varies with the consumer's age but does not vary with their plan selections or as plan premiums change.

We evaluated policy impacts for a variety of state funding costs and corresponding policy parameters. For simplicity and in order to establish a common basis for comparison across the three policy types, we report the majority of results assuming a \$20 state funding cost PMPM for a "Composite" state market scenario intended to represent a typical US state⁷. We selected this funding cost as it falls within the typical range for states that have implemented 1332 reinsurance waivers and supports claims and premium reductions of approximately 10% under reinsurance for the Composite scenario.⁸

RESULTS AND CONCLUSIONS

The results (summarized in Figure 1 on the next page) demonstrate how each policy differs with respect to its comparative advantages:

- **Traditional reinsurance** drives the largest decrease in the claims volatility to which issuers are exposed (19%). Volatility measures the level of risk and uncertainty issuers face due to random variation in claim costs, and can influence capital requirements and issuers' willingness to offer coverage at affordable rates.
- **Uniform coinsurance** reduces the average cost of coverage the most for non-federally subsidized enrollees (14% for the benchmark silver and other plans). Uniform coinsurance also slightly outperforms the other two policies' impacts on the average cost of coverage across the whole market after all subsidies (10% versus 8-9%).
- **Wraparound subsidies** drive the greatest reduction in the minimum cost of coverage for non-federally-subsidized consumers (17%), and can be targeted towards the consumers most in need of assistance.

⁶ To be precise, wraparound subsidies that apply directly to consumer premiums at the point of sale require a marketplace enrollment pathway outside of the federal platform, since the current federal platform does not support extensions or modifications to the federal subsidy structure. Our analysis does not model the financial impact of transitioning from a federal platform to a state-based marketplace, which would be a material consideration for each stakeholder.

⁷ The \$20 PMPM state funding cost is expressed as the average across all individual QHP enrollees, although most or all of these funds will be financed from sources outside of the individual market. To account for the substantial impact of Medicaid Expansion on states' individual market populations and associated federal subsidies, we also report results separately for representative markets under each of Medicaid Expansion and Non-Expansion.

⁸ It is difficult to compare the financial characteristics and trade-offs across the three categories of premium reduction policies without first anchoring them to a shared level of collective investment by all the stakeholders in a state. We also evaluated policy impacts for alternate state funding levels; while the magnitude of impacts changed, core conclusions were unchanged with respect to each policy's relative advantages.

**FIGURE 1: POLICY OPTION IMPACTS AND RANKINGS UNDER COMPOSITE SCENARIO
(RANK OF 1 = MOST EFFECTIVE, IMPACTS ARE FOR A \$20 PMPM STATE FUNDING COST, RELATIVE TO NO-POLICY BASELINE)**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

IMPACT MEASURE	POLICY TYPE					
	Variations on 1332 Reinsurance Waiver					
	TRADITIONAL REINSURANCE		UNIFORM COINSURANCE		WRAPAROUND PMPM SUBSIDY	
	RANK	% IMPACT	RANK	% IMPACT	RANK	% IMPACT
Net Claim Reduction	2	-11%	1	-15%	3	0%
Relative Claim Volatility (entire market)	1	-19%	3	+0%	2	0%
Overall Net Premium Impact (entire market)	2	-9%	1	-10%	3	-8%
Benchmark Silver Premium (non-APTC eligible)	3	-9%	1	-14%	2	-13%
Minimum Non-Catastrophic Cost of Coverage (non-APTC eligible)	3	-9%	2	-14%	1	-17%
Modeled parameters	58.6% coinsurance on annual claims between \$75,000 and \$500,000		14.9% coinsurance on all claims up to \$1MM		\$57 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)	

Across the three policies, there are stark differences in premium impacts for non-APTC-eligible consumers: Traditional reinsurance reduces the benchmark silver premium for non-federally-subsidized consumers by 9%, versus 14% for uniform coinsurance and 13% for wraparound subsidies⁹.

While the policies' premium impacts differ substantially for specific plans and enrollee subpopulations, they do not differ as much in their aggregate impact to net premiums, averaged across the market as whole after state and federal subsidies: 8% for wraparound subsidies, 9% for traditional reinsurance, and 10% for uniform coinsurance. See the "Math Behind the Policy Differences" box below for an explanation of why premium impacts vary by policy type.

Math Behind the Policy Differences

The substantial variation across policies' premium impacts for non-federally-subsidized consumers is largely due to differences in how state funds and federal pass-through dollars are allocated. Traditional reinsurance only offsets high cost claims that exceed the attachment point. To the extent that high cost claims are more prevalent for issuers offering high cost plans (which is the case for our simulation), reinsurance will disproportionately benefit these issuers, leading to a compression in claim (and therefore premium) differences between the "benchmark" (second-lowest-cost silver) plan whose premium level is used to set federal APTC payments and plans from higher cost issuers.

This compression in premium rates leads to net savings for APTC-eligible consumers who apply credits based on the benchmark plan towards the purchase of richer plans. Because we assume the same level of state funding for all three scenarios, additional savings for APTC-eligible consumers are offset by lesser savings for unsubsidized consumers earning more than 400% of the FPL. We estimate that approximately 30% of savings under traditional reinsurance accrue to already-subsidized individuals and families in the form of reduced net premiums (e.g. when purchasing plans more expensive than the benchmark silver), compared to approximately 10% of savings under uniform coinsurance and 0% under wraparound subsidies.

When comparing savings in aggregate across all consumer types (both federally subsidized and non-subsidized), the additional variation in *overall* net premium impacts after subsidies comes from two key factors: (1) The amount of federal APTC dollars repurposed as pass-through funds used to reduce claims, and (2) a proportional reduction in issuer PMPM profit/risk margins when funds are used to reduce issuers' claims responsibility:

- Traditional reinsurance disproportionately reduces premiums for higher cost plans and is therefore inefficient at generating federal pass-through payments tied to reductions in the benchmark silver plan (via APTCs indexed to the benchmark silver). Traditional reinsurance reduces claims by 11% under the Composite scenario using \$20 PMPM in state funding and \$36 PMPM in federal pass-through funds, for a 9% overall net premium reduction.

⁹ For low cost silver plans offered off-exchange without cost sharing reduction (CSR) rate loads, we estimate premium impacts of 9%, 14%, and 14% for traditional reinsurance, uniform coinsurance, and wraparound subsidies, respectively.

Math Behind the Policy Differences (continued)

- Uniform coinsurance allocates a greater portion of savings than traditional reinsurance towards the second-lowest-cost (benchmark) silver plan, thereby reducing APTCs more. By more efficiently converting federal spending on APTCs into federal pass-through funds (without affecting total federal spending),¹⁰ uniform coinsurance can apply more funds than traditional reinsurance towards reducing claims (\$53 PMPM in federal pass-through funds in addition to \$20 PMPM in state funding), in turn supporting a 15% claims reduction and a 10% overall net premium impact.
- Wraparound subsidies (unlike reinsurance and coinsurance) do not require a 1332 waiver and have no direct impact on premium rates prior to subsidies. Therefore, they do not directly impact APTCs and do not generate federal pass-through funds. Wraparound subsidies also have no direct impact on claims, as the subsidies bypass issuer costs and apply directly to member premiums. The \$20 PMPM in state funding is the only source of funding and leads to an 8% net premium reduction on average.

Informed by these results, and after considering potential secondary impacts due to changes in market incentives, we evaluated the qualitative advantages and tradeoffs of each policy option from the perspective of different market stakeholders. Figure 2 summarizes key takeaways from our evaluation, which we explain and discuss throughout the remainder of this report:

FIGURE 2: KEY TAKEAWAYS BY STAKEHOLDER AND POLICY TYPE

STAKEHOLDERS	KEY TAKEAWAYS
Consumers eligible for federal premium (APTC) subsidies	<ul style="list-style-type: none"> ▪ Traditional reinsurance and uniform coinsurance both reduce the cost for subsidized enrollees to purchase coverage more expensive than the benchmark silver plan. This reduction is greatest for traditional reinsurance, which compresses premium differences between high and low cost plans. ▪ While wraparound subsidies can be used to supplement subsidies for APTC-eligible consumers, this is not the case for the policy scenario evaluated in this report.
Consumers not eligible for federal premium (APTC) subsidies	<ul style="list-style-type: none"> ▪ Traditional reinsurance allocates a smaller share of total premium savings than the other policies towards non-federally-subsidized consumers. Of these savings, the impact of traditional reinsurance is greatest for those enrolling in higher cost health plans. ▪ Uniform coinsurance drives the largest reduction in the average (non-subsidized) consumer premium. ▪ Wraparound subsidies drive the greatest reduction in the minimum cost of coverage (e.g. low cost bronze or silver).¹¹

¹⁰ Federal pass-through funds are financed by reductions in federal APTCs, which are indexed to the premium for the benchmark silver plan. Unlike uniform coinsurance, which reduces all plan premiums by the same percentage, traditional reinsurance reduces high cost plan premiums by a greater percentage than the benchmark silver. By allocating a smaller portion of savings to the benchmark silver plan, traditional reinsurance has a smaller impact on APTCs and generates fewer pass-through funds as a result.

¹¹ In this report, the minimum cost of coverage refers to the lowest cost “metal” (i.e. bronze and above) QHP plan available to all consumers. However, individuals below age 30 or who qualify for certain hardship/affordability exemptions are eligible to purchase ACA-compliant catastrophic plans at a lower rate, if available in their market.

FIGURE 2: KEY TAKEAWAYS BY STAKEHOLDER AND POLICY TYPE

STAKEHOLDERS	KEY TAKEAWAYS
State Government	<ul style="list-style-type: none"> ▪ Traditional reinsurance and uniform coinsurance require federal approval of a Section 1332 waiver. Wraparound subsidies require the state to operate its own state-based marketplace. ▪ Traditional reinsurance has been approved and successfully implemented in many states. Uniform coinsurance is untested. ▪ With traditional reinsurance, the state accepts the greatest funding risk for a given set of parameters, and this can create uncertainty for state budget planning or for whether reinsurance payments to issuers will be prorated. Funding risk exists but is lower for uniform coinsurance and is lowest for wraparound subsidies. ▪ Uniform coinsurance drives the greatest reduction in the benchmark silver premium, resulting in the greatest conversion of APTCs into federal pass-through funds used to reduce claims (while maintaining federal deficit neutrality). This results in the greatest return in terms of the overall premium impact for a given state contribution, so that fewer state dollars are required to lower the benchmark silver premiums the same amount as would be required using traditional reinsurance. ▪ Wraparound subsidies enable the most state control over how policy funds are applied and which consumers benefit.
Federal Government	<ul style="list-style-type: none"> ▪ Under a 1332 waiver, any reinsurance or coinsurance program is prospectively designed to be cost neutral to the federal government. ▪ Wraparound subsidies do not require federal approval.
Issuers	<ul style="list-style-type: none"> ▪ Traditional reinsurance drives the greatest reduction in issuers' risk from claims volatility. ▪ Traditional reinsurance alters competitive dynamics and the balance of risk adjustment to the benefit of the highest cost issuers. ▪ Uniform coinsurance reduces all issuers' claims and required premiums by approximately the same percentage. ▪ Wraparound subsidies reduce eligible members' premiums by the same amount PMPM regardless of the plan or issuer.
Providers	<ul style="list-style-type: none"> ▪ Providers may benefit from higher enrollment volume under all three policies. ▪ Traditional reinsurance may encourage greater enrollment in richer benefit plans with broader networks, increasing patient volume for these networks. ▪ Wrap-around subsidies may encourage enrollees to purchase leaner coverage, which may affect providers' patient volumes and incentivize participation in "narrow" provider networks. ▪ Uniform coinsurance is likely to fall in between these two endpoints, by maintaining pre-existing proportions between premiums for richer and leaner benefit plans.

While this report primarily focuses on evaluation and comparison of the three policy types defined above (and variations thereof), states that wish to improve access to affordable coverage are not limited to only one policy. For example, states may elect to pair two of these policies together, such as pairing traditional reinsurance or uniform coinsurance with state-based subsidies. While outside of the scope of this report, states may also consider other market reforms, such as policies that address consumer out of pocket costs. See the "State reform activity and 1332 waivers" section of this report below for additional discussion of the market reform landscape as of 2019.

Overview

MARKET AND POLICY SCENARIOS

Using an ACA marketplace simulation model (see “About the Model,” below), we evaluated policy impacts for a variety of state funding costs and policy parameters. The funding cost represents the level of contribution from all state-based sources (e.g., general funds, assessments on commercial coverage, etc.). For each target funding cost, we estimated policy parameters (e.g. stop loss attachment points, coinsurance, or PMPM premium subsidy amounts for each of traditional reinsurance, uniform coinsurance, and wraparound PMPM subsidies) that could be supported by the state and federal funds generated.

For simplicity and in order to establish a common basis for comparison across the three policy types, we report the majority of results assuming a \$20 PMPM state funding cost, for which the membership denominator is expressed across the entire individual QHP market (even when the policy applies to a subset of enrollees and the source of the funds comes from outside of the market).¹² We selected this funding level as it falls within the typical range we have observed across the states that have already implemented Section 1332 reinsurance waivers, and supports a reduction in issuer premiums of approximately 10% under reinsurance for the Composite scenario (described below).

We found that directional results are robust under a variety of funding levels¹³. The required coinsurance for a given reinsurance attachment point scales linearly with the target state funding cost, and the majority of results share this linear relationship. For a demonstration of how simulation results vary in magnitude (but retain the same directional relationships) as the funding target and policy parameters are adjusted, please refer to Figures 26, 27, and 28 in Appendix A.

Moreover, because the performance of premium reduction policies depends heavily on the marketplace characteristics in each state, we assessed results across three different representative market scenarios: a composite marketplace, or “Composite,” scenario that is broadly representative of the average state market nationwide, and “Medicaid Expansion” and “Non-Expansion” scenarios to represent state markets that either expanded Medicaid or elected not to do so:

- **Composite:** This scenario approximates the weighted average benefit year 2018 individual QHP market composition across both Medicaid Expansion and Non-Expansion states. Baseline claim costs (before applying the state policies) are calibrated to 2018 individual QHP claim costs nationwide, trended forward to 2020.
- **Medicaid Expansion:** This scenario approximates the weighted average benefit year 2018 individual QHP market composition across Medicaid Expansion states. Baseline claim costs reflect the same unit cost level and trend adjustments as the Composite scenario, with differences solely attributable to differences in the plan mix, demographic profile, and average morbidity level of the enrollee population.
- **Non-Expansion:** This scenario is defined in the same way as the previous two scenarios, but based on the 2018 individual QHP market composition across states that had not expanded Medicaid.

About the Model

To assess the impact of state premium reduction policies on market stakeholders, we implemented a simulation model that leverages the claims and eligibility data for nearly 1 million unique individuals enrolled in individual QHP coverage. We reweighted and adjusted these data to mirror the population and claims profiles of various representative and hypothetical state marketplaces. We then seeded each marketplace with an array of issuers that vary in unit cost and enrollee population profile, and simulated the impact of premium reduction policies on market claims costs, volatility levels (using a Monte Carlo methodology), risk adjustment transfers, and premium rates by issuer and in total across the marketplace. Using this model, we also measured the expected impact of each policy on federal premium subsidies, federal “pass-through payments,” and the total funding cost to the state. For an in-depth discussion of the simulation model and its underlying methodology, please refer to the “Data and methodology” section of this report below.

¹² It is difficult to compare the financial characteristics and trade-offs across the three categories of premium reduction policies without first anchoring them to a shared level of collective investment by all the stakeholders in a state.

¹³ We tested state funding levels ranging from \$10 PMPM to \$40 PMPM, which encompasses the majority of state 1332 reinsurance waivers approved to date.

While results for the three modeled market scenarios vary with respect to the *magnitude* of each policy's impacts and advantages, the core *directional* conclusions when evaluating and comparing policies remain identical across all three scenarios. Figure 3 shows the parameter values we estimated for each pairing of policy type and market scenario:

FIGURE 3: POLICY PARAMETERS BY MARKET SCENARIO (\$20 PMPM STATE FUNDING COST)

MARKET COMPOSITION SCENARIO	POLICY TYPE		
	Variations on 1332 Reinsurance Waiver		
	TRADITIONAL REINSURANCE	UNIFORM COINSURANCE	WRAPAROUND PMPM SUBSIDY
Composite	58.6% coinsurance on annual claims between \$75,000 and \$500,000	14.9% coinsurance on all claims up to \$1 million	\$57 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)
Medicaid Expansion	55.3% coinsurance on annual claims between \$75,000 and \$500,000	13.5% coinsurance on all claims up to \$1 million	\$49 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)
Non-Expansion	62.3% coinsurance on annual claims between \$75,000 and \$500,000	17.5% coinsurance on all claims up to \$1 million	\$70 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)

For the wraparound subsidy policy modeled for this report, subsidies are age-adjusted to the age of each enrollee using U.S. Department of Health and Human Services (HHS) allowable age rating factors (e.g. a \$57 PMPM age 40 age-adjusted subsidy translates to \$45 subsidy for age 21 and \$135 for age 65). The subsidies are only received by those earning greater than 400% FPL, but composite to \$20 PMPM across the aggregate marketplace membership.

For all three scenarios, we balanced baseline premium levels (before applying the state policies) to an 80% traditional loss ratio¹⁴ (claims net of risk adjustment over gross premium), reflecting a 5% profit/risk margin (before income tax, which corresponds to roughly 3-4% post-tax), 7% retention for state and federal taxes and fees, and 8% retention for administrative expenses. Administrative expenses are held constant after application of the state policies, while the other components of retention are assumed to vary with issuer premium rates. We assumed that issuers set premiums correctly on a prospective basis, with all variance in observed loss ratios solely due to random volatility in the risk pool and enrollee claim costs. State funding costs include the cost of forgone state taxes and fees where applicable, while federal pass-through payments reflect changes to the benchmark silver premium for APTC-eligible enrollees, net of forgone federal revenue (such as exchange user fees or the health insurance provider fee). Please refer to the "Data and methodology" section of this report below for additional information on how each market scenario was defined and developed.

While we assumed issuers will reduce their *PMPM* profit/risk margins along with benefit costs, for our analysis we held profit/risk margins constant as a *percentage* of premium. Within the text of the report, we also discuss circumstances that may lead issuers to adjust these percentage margins, such as reduced exposure to claims volatility or to hedge against the risk that a state may prorate reinsurance or coinsurance payments due to a fixed state budget. Similarly, we did not model changes in enrollment and consumer plan selections in response to these policies, but within the report we discuss how each policy may affect consumer behavior and alter incentives for and behavior of other market stakeholders.

SECTION 1332 WAIVERS

Two of the three policies that we consider – traditional reinsurance and uniform coinsurance – require the state to obtain federal approval for a Section 1332 State Innovation Waiver. Section 1332 has been part of the ACA since its initial passage, but came with a statutory delay such that 1332 waivers first became available as a state policy tool in 2017. These waivers permit states to waive specific provisions of the ACA in order to "pursue innovative strategies for providing their residents with access to high quality, affordable health benefits while retaining the basic protections of the ACA."¹⁵ In order to obtain approval for a 1332 waiver, a state must demonstrate compliance with a series of "guardrails," which we discuss in more detail later in the "State reform activity and 1332 waivers" section of this

¹⁴ Unlike the federal Medical Loss Ratio (MLR) calculation prescribed by the ACA, a traditional loss ratio does not include adjustments to remove taxes and fees from the premium revenue denominator nor add qualifying health improvement activity expenses to the benefit expense numerator. For this reason, a traditional loss ratio is typically lower than the corresponding MLR under the federally prescribed calculation.

¹⁵ CMS. Section 1332: State Innovation Waivers. Retrieved October 10, 2019, from https://www.cms.gov/ccio/programs-and-initiatives/state-innovation-waivers/section_1332_state_innovation_waivers-.html.

report. One of these guardrails is particularly relevant to the analysis in this report: the “deficit neutrality” guardrail intended to ensure 1332 waivers neither increase nor reduce the federal deficit.

To the extent that a state’s market modifications under a 1332 waiver reduce the cost of coverage for the benchmark silver plan against which federal APTCs are indexed, there will be a corresponding reduction in federal APTCs applied to consumer premiums in the state. In order to encourage states to enact reforms that reduce federal APTC payments while retaining compliance with the deficit-neutrality guardrail, Section 1332 of the ACA requires the federal government to reimburse states for the expected value of lost APTC subsidies (net of certain offsets) in the form of federal “pass-through payments.”

These federal pass-through payments are essential to the effectiveness of 1332 reinsurance waivers (including variations such as uniform coinsurance). Without these pass-through funds, a substantial portion of state reinsurance funds would go towards reducing premiums for subsidized enrollees already insulated from the cost of coverage, effectively substituting state dollars for federal APTCs and reducing total federal funding to the state. In contrast, under a 1332 waiver, the greater the reduction in the premium for the benchmark silver plan, the greater the reduction in APTCs, and therefore the greater the value of federal pass-through funds to supplement state funds used for the reinsurance program (with no impact to net federal spending).

COMPOSITE SCENARIO RESULTS

**FIGURE 4: POLICY OPTION MARKET IMPACTS (\$20 PMPM STATE FUNDING COST)
COMPOSITE SCENARIO (EXPANSION AND NON-EXPANSION COMBINED)**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

MEASURES	BASE No additional waiver funding	Variations on 1332 Reinsurance Waiver		
		TRADITIONAL REINSURANCE 58.6% coinsurance on annual claims between \$75,000 and \$500,000	UNIFORM COINSURANCE 14.9% coinsurance on all claims up to \$1MM	WRAPAROUND PMPM SUBSIDY \$57 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)
Implementation and Funding				
(a) Key Implementation Requirements	n/a	1332 waiver		State-Based Exchange
(b) State Funding Cost PMPM	\$0	\$20.00		
(c) Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.16	1.21	1.00
Premium Impacts				
(d) Avg. Issuer Premium PMPM (before all subsidies)	\$604	-10%	-14%	0%
(e) Avg. Member Premium PMPM (net of all subsidies)	\$247	-9%	-10%	-8%
(f) Benchmark Silver Prem. PMPM, Age 40 (non-APTC eligible)	\$457	-9%	-14%	-13%
(g) Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$412	-9%	-14%	-14%
(h) Lowest Bronze Prem. PMPM, Age 40 (non-APTC eligible)	\$343	-9%	-14%	-17%
(i) % Change in Volatility of Avg. Issuer Loss Ratio (claims net of risk adj.)	n/a	-11%	+1%	0%
Claims Impacts				
(j) Net Claims PMPM (net of waivers and HCRP ¹⁶)	\$483	-11%	-15%	0%
(k) % Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-28%	-15%	0%
(l) % Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-19%	+0%	0%

Notes:

Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

¹⁶ High cost risk pooling adjustment (part of the federal risk transfer program).

Figure 4 above provides a high-level quantitative summary of results under the Composite market scenario. Results are boxed and bolded in cases where one policy has a clear advantage over the other two with respect to a given metric. For additional quantitative detail as well as to see how policy parameters and results vary with respect to states' Medicaid expansion status and other market characteristics, please refer to the "Detailed results and discussion" section of this report below.

Each of the above policy options has its own distinct advantages (summarized in Figure 5 below):

- Traditional reinsurance leads to the greatest reduction in claim volatility, reducing volatility of net claims (relative to expected claim costs) across the entire simulated market by 19% of the baseline (in the absence of reinsurance, row l of Figure 4) and the volatility of the average simulated issuer's risk-adjusted loss ratio by 11% of the baseline (row i). In this context, volatility measures the level of risk and uncertainty issuers face due to random variation in claim costs, which can influence capital requirements and issuers' willingness to offer coverage at affordable rates. Net claims are calculated after applying each state policy as well as the federal high-cost risk pooling (HCRP) adjustment for claims above \$1 million.
- Uniform coinsurance leads to the greatest reduction in average market premiums for consumers not eligible for federal premium subsidies (14%, rows d, f, g, and h) by directing a greater proportion of premium savings than traditional reinsurance towards lower cost plans such as the benchmark (i.e., second-lowest cost) silver plan. We also estimate a slight advantage for uniform coinsurance in terms of the average premium impact across all enrollees, net of all subsidies (10%, row e).
- This latter advantage is also expressed through a higher "Premium Impact-to-State-Funding-Cost Ratio" for uniform coinsurance relative to the other policies (row c). This metric reflects the ratio of the PMPM reduction to the average market premium (net of all subsidies) to the PMPM funding cost borne by the state. It increases above 1.00 as state and federal funds used to reduce claims also drive a proportional reduction in issuers' PMPM profit/risk margins, and is slightly higher for uniform coinsurance than reinsurance due to a greater effectiveness at reducing the benchmark silver premium and thereby generating federal pass-through funds.
- Wraparound subsidies lead to the most affordable minimum cost of coverage for non-APTC-eligible individuals¹⁷, driving a 17% reduction to the premium for the lowest-cost bronze plan (row h).
- Uniform coinsurance and wraparound subsidies are effectively tied with respect to the impact on the lowest-cost silver premium offered *off-marketplace* (14%, row g), under the assumption that issuers' rate loads for unpaid federal cost-sharing reduction (CSR) payments are limited to silver plans offered on -marketplace, with each issuer offering "mirrored" off-marketplace silver plans that omit this rate load.

FIGURE 5: POLICY OPTION IMPACTS AND RANKINGS UNDER COMPOSITE SCENARIO
(RANK OF 1 = MOST EFFECTIVE, IMPACTS ARE FOR A \$20 PMPM STATE FUNDING COST, RELATIVE TO NO-POLICY BASELINE)

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

IMPACT MEASURE	POLICY TYPE					
	Variations on 1332 Reinsurance Waiver					
	TRADITIONAL REINSURANCE		UNIFORM COINSURANCE		WRAPAROUND PMPM SUBSIDY	
	RANK	% IMPACT	RANK	% IMPACT	RANK	% IMPACT
Net Claim Reduction	2	-11%	1	-15%	3	0%
Relative Claim Volatility (entire market)	1	-19%	3	+0%	2	0%
Overall Net Premium Impact (entire market)	2	-9%	1	-10%	3	-8%
Benchmark Silver Premium (non-APTC eligible)	3	-9%	1	-14%	2	-13%
Minimum Non-Catastrophic Cost of Coverage (non-APTC eligible)	3	-9%	2	-14%	1	-17%

¹⁷ In this report, the minimum cost of coverage refers to the lowest cost "metal" (i.e. bronze and above) QHP plan available to all consumers. However, individuals below age 30 or who qualify for certain hardship/affordability exemptions are eligible to purchase ACA-compliant catastrophic plans at a lower rate, if available in their market.

While the specific numerical results are sensitive to the \$20 PMPM funding cost and associated policy parameters as well as the assumptions and composition of the Composite market scenario, the directional conclusions regarding each policy's comparative advantages (as ranked in Figure 5 above) are robust under a wide array of funding levels, policy parameters, assumptions, and market types.¹⁸

UNDERSTANDING DIFFERENCES IN PREMIUM IMPACTS

By supporting a reduction in issuers' PMPM profit/risk margins (holding profit/risk margin constant as a percentage of premium), both traditional reinsurance and uniform coinsurance will reduce premiums by more (in dollars) than the cost of the funds used to reduce claims. This leveraging impact varies with the percentage margin reflected in issuers' premium rates; we assumed a 5% profit/risk margin before state and federal income tax, which corresponds to roughly 3-4% post-tax.

This leveraging impact also varies based on the percentage of the total cost of the policy paid by federal pass through. Policies that generate a greater proportion of funding from federal pass-through funds are able to reduce claims more for a given state funding cost and thereby drive a greater premium impact.

Federal pass-through funds are tied to reductions in the premium for the second-lowest-cost (benchmark) silver plan . By disproportionately reducing claim costs for the highest cost plans, traditional reinsurance is less efficient than uniform coinsurance at targeting reductions to the benchmark silver plan (9% vs. 14% in Figure 5, above) and thereby generating federal pass-through funds. At the same time, traditional reinsurance is more efficient than uniform coinsurance at improving the affordability of coverage options other than the benchmark silver for consumers that are already subsidized. By compressing differences in cost between the benchmark silver plan (against which APTCs are indexed) and higher cost plans, we estimate that approximately 30% of traditional reinsurance savings accrue to already-subsidized individuals and families in the form of reduced net premiums (e.g. when purchasing plans more expensive than the benchmark silver), compared to approximately 10% under uniform coinsurance and 0% under wraparound subsidies.

Unlike the two 1332 waiver policies under consideration, wraparound subsidies apply state funds directly to consumer premiums rather than claim costs, and therefore will not directly affect issuers' profit/risk margins. This is apparent in the 1.00 Premium Impact-to-State-Funding-Cost Ratio for wraparound subsidies in Figure 4, above (row c). However, by directing all state funds solely to consumers whom the state deems most in need of premium assistance (e.g. consumers with incomes above 400% FPL), wraparound subsidies can still be more efficient than either traditional reinsurance or uniform coinsurance at reducing premiums for a targeted subset of consumers.

We discuss and demonstrate these phenomena in-depth in the "Premium Impact Amplification when using State and Federal Funds to Reduce Claims" section later in this report.

STAKEHOLDER PERSPECTIVES

Building on these results, we evaluated each policy option from the perspective of each major stakeholder.

- **Individual consumers:** Consumers who receive federal premium assistance (in the form of APTCs) are unlikely to see any reduction to their out-of-pocket premium from traditional reinsurance. They could, however, see some improvement in their choice of affordable plans, as reinsurance tends to compress differences in cost between plans. This compression will reduce the distance in dollars between the benchmark plan premium against which federal subsidies are indexed and other richer or costlier options.
- Wraparound PMPM subsidies may offer the greatest benefit to cost-conscious, healthier consumers not already eligible for federal premium subsidies, by facilitating the lowest minimum cost of coverage across the three options.
- Uniform coinsurance strikes a balance between these two endpoints, and maximizes the overall savings across all enrollees.
- **Marketplace issuers:** Both traditional reinsurance and uniform coinsurance are projected to reduce PMPM profit/risk margins as premiums decrease (holding profit/risk margins constant as a percentage of premium) . By reducing claims volatility along with the total level of claims in a market, traditional reinsurance may further

¹⁸ We discuss and show results for several of these alternate scenarios in the "Detailed results and discussion" section of this report below, in particular the subsection "Sensitivity of results to key assumptions and market characteristics." We also show policy impacts under alternate funding levels and policy parameters in Figures 26, 27, and 28 of Appendix A.

encourage issuers to reduce profit/risk margins as a percentage of premium (although this latter adjustment is outside of the scope of our simulation, which assumes a fixed rating and participation strategy by issuers). This risk-mitigating feature of reinsurance may even encourage market participation by issuers that would have otherwise exited or declined to enter the market.¹⁹

However, these same issuers, particularly those who may be more efficient at controlling claim costs, may consider reinsurance biased in favor of less efficient competitors. As a result, the benefit of reinsurance on encouraging competition may be mixed.

Traditional reinsurance and uniform coinsurance may be especially attractive to new market entrants because they can ease the capital requirements for new business. In contrast, wraparound PMPM subsidies have no direct effect on issuers, as they are applied directly to consumer premiums at the point of sale, bypassing issuers entirely. However, because this option does not involve parameters that may be adjusted retrospectively, due to changing availability of funds, wraparound subsidies also create no new pricing uncertainty among issuers.

Each policy will also impact the competitive environment that issuers face. By reducing net claim costs the most for issuers with higher unit costs, less effective care management, and/or higher morbidity populations, reinsurance will tend to improve the competitive position of higher-cost issuers and reduce incentives to contain costs. In contrast, by reducing all plan premiums by the same dollar value, wraparound subsidies drive the greatest proportional reduction in premiums for the lowest-cost plans and may further cement the existing competitive advantages of low-cost issuers. Over time, this may increase the incentives for other issuers to pursue aggressive cost containment strategies such as “narrow” provider networks. Uniform coinsurance strikes a balance between these two endpoints.

- **Healthcare providers:** If current reimbursement rates in ACA markets are acceptable to providers, then they will generally benefit from higher insurance enrollment rates, regardless of which policy option is implemented.

As noted previously, traditional reinsurance may encourage greater reliance on—and patient volume for—broad provider networks, with providers benefiting from this increased demand. In contrast, wraparound subsidies may increase the incentives for providers to participate in low-cost issuers’ narrow networks. The incentives created by uniform coinsurance are likely to fall in between these two extremes.

- **State governments**

States may need to seek an optimal balance among the perspectives of the stakeholders represented here, while limiting the funding cost and financial risk borne by the state and its taxpayers. This includes consideration of the following:

- **Implementation requirements:** Traditional reinsurance comes with the advantage of having been successfully approved in 13 states (as of publication), while the acceptance of uniform coinsurance by the federal government and other market stakeholders is still unproven. Wraparound subsidies have the advantage of not requiring federal 1332 waiver approval, but with the limitation that they can currently only be implemented in states that operate their own state-based marketplaces, due to limitations of the federal exchange platform.
- **Financing risk:** Because the value of traditional reinsurance and uniform coinsurance varies with claim costs, which are uncertain, they require the state to bear a greater degree of financing risk for any given set of parameters than fixed wraparound PMPM subsidies. This assumed risk is greatest for traditional reinsurance, as high-cost claims are more volatile than claim costs as a whole. Furthermore, to the extent premium reductions encourage greater unsubsidized enrollment volume, federal pass-through payments will be diluted and states will be responsible for additional funding costs.

If, on the other hand, states choose to set funding levels in advance and let the policy parameters float, then the pricing risk is borne entirely by issuers, and correspondingly higher risk margins may offset a portion of the premium relief.

- **Source of financing and impact on other state stakeholders:** In order to have the intended effect, states must finance policies to reduce marketplace premiums from outside of the individual ACA market itself. The cost of state funding may be borne by several different groups, including through assessments on providers,

¹⁹ Issuers typically have access to private reinsurance policies from reinsurers, but a state-supported program may allow them to manage high claim risk with a smaller impact on premiums.

taxes on residents and businesses, assessments on employer-based group coverage, and other sources. While some of the groups and individuals tapped for funding may benefit indirectly from increased enrollment or stability in the individual market, all are likely to prefer that the state minimizes the cost required to achieve its objectives.

INCENTIVES AND SECONDARY IMPACTS

While we modeled only the direct financial impacts of each policy on claim costs and premium rates without modeling other behavioral changes among consumers, issuers, and healthcare providers, states must consider the potential secondary impacts of each policy due to the incentives each may create for market participants. We consider several such impacts in this report:

- **Enrollment volume and risk pool composition:** All three policy options may encourage greater market participation by healthier and cost-conscious consumers, further reducing the average cost of coverage. However, increased enrollment volume will also necessitate a greater funding expenditure by the state (regardless of option chosen), and dilute the value of federal pass-through payments as a percentage of total funding costs.
- **Population health:** By encouraging more individuals and families to purchase comprehensive health coverage, all three policies will increase consumers' access to necessary care, which has been shown to improve population health outcomes.²⁰
- **Consumer purchasing behavior:** Traditional reinsurance may shift the premium relationships between plans, thereby encouraging consumers to purchase richer and/or higher-cost plans. Wraparound PMPM subsidies will accentuate the premium differences and encourage consumers to select leaner coverage options (such as bronze plans and plans with "narrow" provider networks). The incentives created by uniform coinsurance are likely to fall in between these two end points.
- **Incentives to control costs:** Traditional reinsurance and (to a lesser extent) uniform coinsurance may limit the incentive for issuers to manage claim costs and reduce the incentive for issuers and providers alike to find further cost reductions. As a result, traditional reinsurance and uniform coinsurance have the potential to *increase* gross claim costs (before reinsurance or coinsurance is applied), diverting some of the benefit of these policies away from consumers and toward other stakeholders. In contrast, by driving a greater reduction *as a percentage of premium* for the lowest-cost issuers and plans (through a fixed PMPM premium reduction), wraparound subsidies may increase pressure on issuers and healthcare providers to manage claim costs.

INTERACTION WITH RISK ADJUSTMENT

The federal ACA risk adjustment program will interact with each policy. While uniform coinsurance and wraparound subsidies are unlikely to lead to substantial distortion in risk adjustment, the traditional reinsurance approach can lead to a "double-dipping" phenomenon, whereby the issuers with the sickest enrollees are reimbursed twice for their costs; once through risk adjustment, and again through a disproportionate share of reinsurance payments. However, a state can use an HHS-approved state flexibility adjustment factor to dampen the magnitude of risk transfers under reinsurance²¹ and offset the imbalance associated with "double-dipping." Under the Composite scenario with a \$20 PMPM state funding cost, we found that a 2% reduction in the magnitude of risk transfers (i.e., 0.98 state flexibility adjustment) was sufficient to restore the original balance of the risk adjuster *for issuers with market average unit cost levels* when paired with the specified traditional reinsurance parameters. The magnitude of this adjustment (0.98) is tied to the particular market characteristics, funding level, and policy parameters that we modeled; we recommend that states considering using the flexibility adjustment in this manner conduct a state-specific actuarial analysis to determine the appropriate factor.

²⁰ Kaiser Family Foundation (January 25, 2019). The Uninsured and the ACA: A Primer—Key Facts About Health Insurance and the Uninsured Amidst Changes to the Affordable Care Act. Retrieved November 8, 2019, from <https://www.kff.org/report-section/the-uninsured-and-the-aca-a-primer-key-facts-about-health-insurance-and-the-uninsured-amidst-changes-to-the-affordable-care-act-how-does-lack-of-insurance-affect-access-to-care/>.

²¹ HHS. Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2019, p. 75. Retrieved November 8, 2019, from <https://s3.amazonaws.com/public-inspection.federalregister.gov/2017-23599.pdf>.

In addition, to the extent that issuers' reimbursement rates for providers is positively correlated with enrollee population morbidity²², reinsurance will amplify the existing imbalances in risk adjustment whereby transfers (which are indexed to the market-wide *average* cost level) favor high-cost/high-morbidity issuers at the expense of low-cost/low-morbidity issuers. States wishing to mitigate this specific form of bias may consider a greater state flexibility reduction to transfers than would be warranted if all issuers and plans shared the same unit cost level. However, due to the revenue neutral design of the federal risk transfer formula (whereby payments and charges net out to \$0 across issuers), no state flexibility adjustment can produce unbiased risk transfers across all possible combinations of unit cost and morbidity.

For additional discussion regarding how each policy interacts with the federal risk adjustment program, including quantitative demonstration and derivation of a state flexibility adjustment to counteract risk adjustment / reinsurance double-dipping, please refer to the extended "Interaction with risk adjustment" subsection of "Detailed results and discussion" later in this report.

QUALITATIVE CONCLUSIONS

Figure 6 on the following page provides a high-level qualitative summary of the key benefits and trade-offs associated with each premium reduction policy, which we explore in depth within the body of this report.

²² Correlation between unit cost and morbidity can occur if healthier (i.e. low morbidity) enrollees are more likely to enroll in plans whose units costs are below average due to narrow provider networks, while higher morbidity enrollees are more likely to enroll in plans whose unit costs are above average due to broad provider networks.

FIGURE 6: STATE POLICY OPTIONS: COMPARISON OF KEY BENEFITS AND TRADEOFFS

	POLICY	DEFINITION	KEY BENEFITS	KEY TRADE-OFFS
Variations on 1332 Reinsurance Waiver	Traditional Reinsurance	State funds and federal Section 1332 waiver pass-through funds are used to reimburse health plans for a percentage (coinsurance) of claim costs above a fixed attachment point up to a specified maximum (per member per year).	<ul style="list-style-type: none"> Section 1332 reinsurance waivers have a track record of approval and successful implementation in many states. Reduces the level of volatility risk in a market and reduces capital constraints for market participants, potentially encouraging risk-averse or capital-constrained issuers to offer coverage and reduce profit/risk margins as a percentage of premium. Reducing the spread in the cost of coverage between lower-cost and higher-cost issuers can encourage a greater variety of affordable options for federally subsidized consumers. 	<ul style="list-style-type: none"> Inefficient method of transmitting state funding into reduced costs of coverage for unsubsidized consumers. Savings disproportionately favor issuers with the highest claim costs. Can lead to risk adjustment “double-dipping” (in the absence of corrective action), whereby high morbidity issuers are overcompensated and low morbidity issuers overcharged. Can reduce the incentive for issuers and providers to manage high-cost cases, while encouraging more generous “outlier” clauses in provider reimbursement contracts. State assumes greater volatility risk if setting parameters in advance. Pricing risk is increased if reinsurance parameters are adjusted retrospectively.
	Uniform Coinsurance	State and federal Section 1332 waiver pass-through funds are used to reimburse health plans for a percentage (coinsurance) of claim costs, starting from the first dollar incurred, up to an optional specified maximum (per member per year).	<ul style="list-style-type: none"> Maximizes the expected impact on non-subsidized market premiums and overall premiums net of subsidies, for a given state funding cost. Strikes a balance between traditional reinsurance (which disproportionately favors higher-cost issuers) and a wraparound PMPM subsidy (which disproportionately reduces premiums for the lowest-cost issuers and plans). Minimizes distortion of risk adjustment and competitive dynamics (in comparison to traditional reinsurance). Reduces capital constraints on new market entrants. 	<ul style="list-style-type: none"> This type of policy is untested in practice and could face opposition at the federal level or by state stakeholders. As of the time of publication, no states have applied for Section 1332 waivers of this type. State assumes some volatility risk if setting parameters in advance (though less than under traditional reinsurance). Pricing risk is increased if parameters are adjusted retrospectively.
	Wraparound PMPM Subsidy	State funds are used to extend a fixed subsidy per member per month that applies at the point of sale and wraps around the existing federal APTC subsidy structure. The state subsidy is adjusted for the age of the consumer but does not vary with enrollees’ plan selections.	<ul style="list-style-type: none"> Can be implemented in a state-based exchange without requiring any federal approval or involvement. Under typical conditions, may be the most cost-effective way for a state to reduce the minimum cost of coverage for consumers ineligible for federal premium subsidies (of the three options considered). States can vary the value of subsidies by household income in order to directly address the federal “subsidy cliff” and improve affordability for consumers with the greatest need for assistance. State funding and pricing impact is more predictable than for policies that impact claims. 	<ul style="list-style-type: none"> There is no clear pathway to implementing effective wraparound subsidies in a state with a federally facilitated marketplace. Has no direct impact on the level of claim risk in a marketplace, and therefore may be less effective than the other policies at encouraging issuers to offer coverage or reduce profit/risk margins, limiting the effectiveness of the policy to directly reduce the average cost of coverage. May encourage leaner coverage and less comprehensive provider networks.

ACA individual market affordability

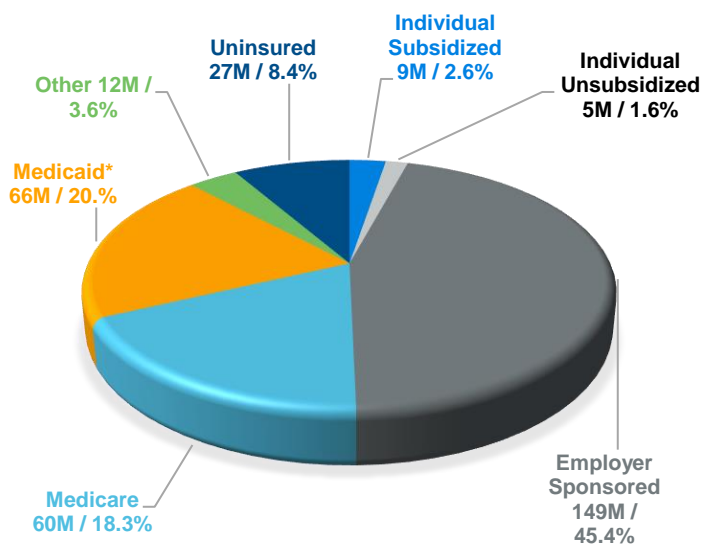
AFFORDABILITY: WHY ARE STATES LOOKING TO REDUCE PREMIUMS?

Upon its passage in 2010, the ACA's sponsors described multiple policy objectives,^{23,24} of which achieving universal, *affordable*, and comprehensive coverage for all Americans was arguably the most important. The primary route by which the ACA attempted to tackle these objectives was through reforms and expansions across all major existing, non-Medicare health benefits markets, including the following:

- Medicaid:** Expand eligibility to all individuals with household incomes below 138% of the federal poverty level (FPL).²⁵
- Large group employer-sponsored insurance (ESI):** Enact a coverage mandate with shared responsibility payments and allow dependents to remain covered by parents' policies until age 26.
- Small group ESI:** Enforce modified community rating and a prohibition on health status underwriting.
- Individual:** Implement a "three-legged stool" approach to expanding affordable access while stabilizing markets through guaranteed issue, the individual coverage mandate, and federal premium subsidies.

With the full enactment of the ACA in 2014, all of these markets either expanded (Medicaid, in most but not all states), maintained (in the case of employer premium contributions under ESI), or introduced (individual market) premium support mechanisms to improve financial access to coverage and to encourage consumer participation. When considered in combination with federally subsidized coverage for Medicare beneficiaries, it is apparent that premium assistance for consumers is and has been an important part of almost the entire health benefits landscape in the United States since at least 2014.

FIGURE 7: 2018 U.S. POPULATION BY HEALTH INSURANCE COVERAGE²⁶



Notably excluded, however, were those individuals with individual coverage and incomes above 400% FPL, as the ACA's federal premium subsidy structure abruptly cuts off once incomes pass that threshold. These individuals do not qualify for Medicaid, may not have access to affordable employer-sponsored coverage, and have incomes that are too high to qualify for ACA marketplace subsidies. As premium rates for individual coverage increase, these consumers must pay the full increase in premiums or otherwise forgo coverage.²⁷

About 38% of the population enrolled in individual health coverage—about 5.2 million persons nationwide—do not qualify for, or otherwise receive, federal premium

²³ HealthCare.gov. Affordable Care Act (ACA). Retrieved November 8, 2019, from <https://www.healthcare.gov/glossary/affordable-care-act/>.

²⁴ Rosenbaum, S. (2011). The Patient Protection and Affordable Care Act: Implications for Public Health Policy and Practice. Public Health Reports. Retrieved November 8, 2019, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3001814/>.

²⁵ In its 2012 decision in response to a court case challenging the constitutionality of the ACA (National Federation of Independent Business v. Sebelius), the U.S. Supreme Court gave states the option to opt out from expanding Medicaid. Despite this, as of the time of publication, all but 14 states have implemented or declared an intention to implement Medicaid Expansion in some form. For a summary of the 2012 Supreme Court decision, see: <https://www.kff.org/wp-content/uploads/2013/01/8347.pdf>.

²⁶ Data from U.S. Census Bureau, CMS, and Milliman analysis related to individual market

²⁷ Some higher-income unsubsidized consumers had a third option available to them: maintain enrollment in transitional or grandfathered policies predating implementation of the ACA. These medically underwritten policies were closed to new enrollment and not subject to ACA single risk pool requirements, resulting in significantly lower premiums than unsubsidized coverage through ACA marketplaces.

assistance.²⁸ When considering only the ACA-compliant segment of the individual market, approximately 29% of individual QHP enrollees (3.5 million individuals, not broken out in Figure 5) do not receive subsidies, though the absolute number of people in this category is decreasing.^{29,30,31} Part of the reason for this decrease may be favorable hiring trends in the employer market, as unsubsidized consumers gain access to employer-sponsored coverage. But recent increases in the uninsured population nationwide³² indicate that many of these unsubsidized consumers may be choosing to forgo coverage entirely, as premium increases have averaged over 12% per year, for a cumulative increase of 75% since the start of the ACA.^{33,34} The cost of coverage for unsubsidized consumers is further augmented by high and rising out-of-pocket costs to access coverage, such as deductibles and copays.³⁵

The declining enrollment of unsubsidized consumers implies that, while some may have enrolled in an employer plan, others entered the ranks of the uninsured. While it is difficult to estimate with certainty, it is likely that at least some of these individuals would consider reentering ACA marketplaces if coverage were more affordable for them.

While individual ACA premiums have stabilized and even declined slightly from their high in the 2018 benefit year,^{36,37} coverage remains unaffordable for many unsubsidized consumers. Without some sort of meaningful price relief or premium support, it is reasonable to expect the trend of declining enrollment in the unsubsidized market to continue. Moreover, there may be little incentive for healthier uninsured individuals who have discontinued coverage to repurchase coverage, unless and until they have health needs. By tilting the balance of risk pool enrollment toward less healthy consumers seeking immediate care, this form of adverse selection will continue to drive premium increases over time for the remaining insured population.

ADVANCED PREMIUM TAX CREDITS

The APTCs instituted by the ACA for lower-income households are a form of “defined benefit” subsidy in that they guarantee each subsidized consumer can purchase the second-lowest-cost silver plan in a particular county (or “benchmark plan”) for no more than a specified portion (or “applicable percentage”) of that person’s income in premiums. As premium rates for the benchmark plan increase over time (whether through inflation, enrollee aging, etc.), consumers’ out-of-pocket premium responsibilities remain fixed (provided they purchase the benchmark plan and their incomes do not change). Furthermore, premium responsibilities are not age-adjusted, but the cost of the benchmark plan is, so the value of subsidies to which consumers are entitled increases with age.

The applicable percentage of income for which consumers are responsible increases with income up to 400% FPL, after which APTCs are cut off abruptly and entirely (row c in Figure 8). The resulting change in premium responsibility above 400% FPL is commonly referred to as the subsidy “cliff.” This cliff is particularly steep for older individuals (because the value of the forgone subsidies increases with age). Moreover, for consumers with incomes just over 400% FPL, the cost of coverage can take up a substantial percentage of their incomes. These dynamics are illustrated in Figure 8.

²⁸ Estimated for 2018; includes ACA compliant, grandfathered and transitional.

²⁹ CMS (July 2, 2018). Trends in Subsidized and Unsubsidized Individual Health Insurance Market Enrollment, p. 5. Retrieved November 8, 2019, from <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Marketplaces/Downloads/2018-07-02-Trends-Report-2.pdf>.

³⁰ APTC enrollment for 2018 is provided in the 2018 CMS effectuated enrollment report: CMS. Early 2019 Effectuated Enrollment Snapshot. Retrieved November 8, 2019, from <https://www.cms.gov/sites/default/files/2019-08/08-12-2019%20TABLE%20Early-2019-2018-Average-Effectuated-Enrollment.pdf>.

³¹ Total risk pool enrollment for 2018 is provided in Appendix A of the 2018 risk adjustment report: CMS. BY18-AppendixA. Retrieved November 8, 2019, from <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Premium-Stabilization-Programs/Downloads/BY18-AppendixA.xlsx> (Excel download).

³² U.S. Census Bureau. Health Insurance Coverage in the United States: 2018. Retrieved November 8, 2019, from <https://www.census.gov/library/publications/2019/demo/p60-267.html>.

³³ Kaiser Family Foundation, Health Insurance Marketplace Calculator, 2014-2019, op cit.

³⁴ Factors contributing to the observed rate increase since 2014 include medical inflation, corrective action in response to initial underpricing of rates, termination of the federal transitional reinsurance program at the end of 2016, cessation of cost-sharing reduction (CSR) payments to issuers in the fall of 2017, and elimination of the individual coverage mandate penalty beginning in 2019.

³⁵ Kaiser Family Foundation. Cost-Sharing for Plans Offered in the Federal Marketplace, 2013-2019. op cit.

³⁶ Kaiser Family Foundation, Average Marketplace Premiums by Metal Tier, 2018-2020, op cit.

³⁷ Milliman. Has the ACA Death Spiral Kicked the Bucket? op cit.

FIGURE 8: ILLUSTRATION OF SUBSIDY CLIFF AND NET PREMIUM INCREASE BY INCOME*

MEASURE	CALCULATION	HOUSEHOLD INCOME AS % OF FEDERAL POVERTY LEVEL			
		150%	250%	400%	410% (SUBSIDY CLIFF)
(a) Annual Income (single)		\$18.7K	\$31.2K	\$50.0K	\$51.2K
(b) Out-of-Pocket Premium Cap		4.12%	8.29%	9.78%	NA
(c) Monthly Gross Premium				\$1,171	
(d) Subsidy	<i>Below 400% FPL: (c)-(e) Above 400% FPL: \$0</i>	\$1,106	\$955	\$764	\$0
(e) Monthly Net Premium	<i>Below 400% FPL: (a)*(b)/12 Above 400% FPL: (c)</i>	\$64	\$216	\$407	\$1,171
(g) Annualized Loss of Subsidy Dollars as Income Increases	$\Delta \text{ in } (d) \times 12$		(\$1,817)	(\$2,298)	(\$9,162)
(h) Net Premium as a Percentage of Income	$(h) = (f) / (a)$	4.12%	8.29%	9.78%	27.43%

* Note: Based on 2020 rates and income for a single 55-year-old enrollee in Holbrook, Arizona.

Using benefit year 2020 premiums for a single 55-year-old consumer in Navajo County, Arizona, as an example, row (d) of Figure 8 illustrates how federal subsidies decline gradually with consumer incomes up to 400% FPL and then disappear entirely upon eclipsing the cutoff at 400% FPL. This drives a substantial and sudden increase in out-of-pocket premium costs as income surpasses 400% FPL (row g). Moreover, for those just over the subsidy limit (e.g., 410% FPL), the out-of-pocket premium as a percentage of income is nearly three times what it would have been if the consumer earned just \$1,000 less (row h: 27.43% vs. 9.78%).

Certain consumer or market characteristics can further exacerbate this affordability cliff for unsubsidized consumers, including:

- Family coverage:** Multiple members of a family can lose subsidy eligibility, multiplying the effects above over each additional dependent.
- Age:** While subsidized individuals are protected from the high costs of insurance for older consumers through the percentage-of-income cap on their premium responsibilities, the cost of coverage for older enrollees ineligible for federal premium subsidies can be as much as three times the premium rate charged to young adults.³⁸
- Geography:** Prices tend to be higher in areas where there is less competition among issuers or healthcare providers, as well as in areas with higher costs of living. Higher prices in these areas can compound affordability issues and the subsidy cliff for unsubsidized consumers.

The subsidy cliff and corresponding affordability challenges for unsubsidized consumers have been much discussed and well-understood throughout the course of the ACA. However, efforts to stabilize markets over the first few years of ACA implementation largely focused on addressing issues with the marketplaces themselves, including with respect to special enrollment periods, risk adjustment, cost-sharing reduction payments, and other market-wide issues. While these adjustments were being made, prices continued to increase, increasing the financial pressures on the declining portion of unsubsidized consumers that continued to maintain coverage.

³⁸ Premiums for older individuals are still significantly cross-subsidized by younger enrollees through the ACA's age rating restrictions, which limit variation in adult premiums by age to a 3:1 ratio.

State reform activity and 1332 waivers

To begin addressing these issues, states have been actively considering and pursuing various market reforms and modifications intended to reduce consumer costs and improve access to affordable coverage.

SECTION 1332 WAIVERS

Beginning in 2017, the Section 1332 State Innovation Waiver first became available as a policy tool for states. Section 1332 of the ACA permits a state to waive specific provisions of the ACA in order to “pursue innovative strategies for providing their residents with access to high quality, affordable health benefits while retaining the basic protections of the ACA.”³⁹ States wishing to employ a 1332 waiver must apply for federal approval and demonstrate compliance with the following four statutory “guardrails”:

1. **Coverage:** The waiver provides coverage to a comparable number of residents of the state as would be provided coverage absent the waiver.
2. **Affordability:** The waiver provides coverage as affordable as would be provided absent the waiver.
3. **Comprehensiveness:** The waiver provides coverage that is at least as comprehensive as would be provided absent the waiver.
4. **Deficit neutrality:** The waiver would not increase the federal deficit.

To the extent that a state’s market modifications under a 1332 waiver reduce the cost of coverage for the benchmark silver plan against which federal APTCs are indexed, there will be a corresponding reduction in federal APTCs applied to consumer premiums in the state. In order to encourage states to enact reforms that reduce federal payments while retaining compliance with the deficit-neutrality guardrail, Section 1332 of the ACA requires the federal government to reimburse states for the expected value of lost APTC subsidies (net of certain offsets) in the form of federal “pass-through payments.”

Reinsurance programs have become the most common approach for states wishing to leverage federal 1332 waiver pass-through funds to reduce market premiums while still adhering to the four guardrail requirements. Of the 13 states with approved 1332 waivers as of October 2019, 12 of the approved waivers include reinsurance provisions.⁴⁰ Under what we refer to in this report as “traditional reinsurance”,⁴¹ states reimburse issuers for a certain percentage (or coinsurance) of enrollees’ annual claim costs within a defined corridor (defined by an attachment point and a claim maximum). By reducing issuers’ net claim costs, issuers are in turn expected to pass on their savings in the form of reduced premiums to consumers.

From a consumer perspective, most subsidized enrollees purchasing the benchmark plan will see no change in their out-of-pocket premium costs.⁴² Because subsidized consumers are already insulated from all or most changes in the cost of coverage, the direct benefits of premium reductions primarily accrue to unsubsidized (and certain lightly subsidized) consumers. In Figure 9, we demonstrate this dynamic for three example consumer households, each differing with respect to their level of subsidization, using illustrative premium and subsidy amounts. In this case, a state-reform initiative that lowers gross monthly premiums by \$100 is introduced.

³⁹ CMS. Section 1332: State Innovation Waivers. Retrieved October 10, 2019, op cit.

⁴⁰ Kaiser Family Foundation (November 6, 2019). Tracking Section 1332 State Innovation Waivers. Retrieved November 8, 2019, from <https://www.kff.org/health-reform/fact-sheet/tracking-section-1332-state-innovation-waivers/>.

⁴¹ Alaska’s condition-based reinsurance program offers an example of what we would refer to as a “nontraditional” reinsurance waiver: CMS (July 11, 2017). Alaska: State Innovation Waiver under section 1332 of the PPACA. Retrieved November 8, 2019, from <https://www.cms.gov/CCIIO/Programs-and-Initiatives/State-Innovation-Waivers/Downloads/Fact-Sheet.pdf>.

⁴² However, subsidized consumers purchasing plans richer than the benchmark may still benefit from a compression between higher-cost and lower-cost coverage,

FIGURE 9: ILLUSTRATION OF HOW CONSUMER SAVINGS UNDER A STATE REFORM INITIATIVE VARY WITH FEDERAL SUBSIDIES

Household	PREMIUM AND SUBSIDIES WITHOUT STATE REFORM INITIATIVE			PREMIUM AND SUBSIDIES WITH STATE REFORM INITIATIVE			REFORM IMPACT	
	(1) Gross Premium	(2) Federal APTC Subsidy	(3) Net Premium	(4) Gross Premium	(5) Federal APTC Subsidy	(6) Net Premium	(7) Consumer Savings	(8) Federal APTC "Savings"
A (Heavily Subsidized)	\$500	\$300	\$200	\$400	\$200	\$200	\$0	\$100
B (Lightly Subsidized)	\$500	\$75	\$425	\$400	\$0	\$400	\$25	\$75
C (Unsubsidized)	\$500	\$0	\$500	\$400	\$0	\$400	\$100	\$0

- **Household A (“Heavily” Subsidized):** Consumers qualifying for premium assistance (column 2) greater than the premium reduction resulting from the introduction of a state reform initiative see no reduction in net premium cost. Instead, 100% of the premium savings translate into a reduced APTC expenditure by the federal government, the savings from which are ultimately passed on to the state in the form of 1332 waiver pass-through funding.
- **Household B (“Lightly” Subsidized):** For certain consumers qualifying for limited premium assistance, premium savings will be shared by the consumers and the government (initially the federal government, but ultimately the state). Prior to introduction of the state reform initiative, Household B qualifies for a \$75 monthly premium subsidy and is responsible for a \$425 net premium. After a \$100 reduction in gross premiums, the monthly premium subsidy for Household B drops to \$0 while its monthly net premium responsibility drops by \$25 to \$400. The remaining \$75 in savings accrues initially to the federal government but ultimately becomes pass-through funding under the 1332 waiver.
- **Household C (Unsubsidized):** Higher-income consumers who did not qualify for premium assistance prior to the implementation of a state reform initiative will realize the full value of any premium savings (\$100 in this example).

As the above illustrations make clear, reductions to market-wide premiums coming from a 1332 waiver generally do not benefit subsidized consumers to the same degree that they benefit unsubsidized consumers. The net effect of employing a 1332 waiver for a state reinsurance program is to receive federal funds that would have previously financed APTCs for those under 400% FPL, while using state funds to support further premium reductions for the lightly subsidized and unsubsidized.

STATE-BASED WRAPAROUND PREMIUM SUBSIDIES

While Section 1332 waivers provide one policy tool by which a state can introduce funds into a marketplace in order to reduce premiums, they are not the only option, particularly for state-based marketplaces free of the limitations and requirements of the federal platform. One such approach, which we examine in depth in this report, is for a state-based marketplace to extend premium subsidies that “wrap around” the federal subsidy structure and benefit consumers either ineligible for or receiving only limited federal premium assistance.

California, which has enacted a wider variety of healthcare reform approaches in the last two years than most other states, recently passed exactly such a reform. Through a bill signed into law in June 2019, which goes into effect on January 1, 2020, California will expand the federal defined-benefit subsidy structure to cover households with incomes up to 600% FPL and to augment the value of federal subsidies for certain households with income at or below 400% FPL.⁴³

OTHER STATE REFORMS TO REDUCE THE COST OF ACA COVERAGE AND CARE

While this report primarily examines state policies that reduce the cost of ACA coverage by directly injecting additional funding into the state marketplace, there are other marketplace reforms that states have considered or enacted in order to promote access to affordable coverage and care (e.g. reinstatement of an individual coverage mandate, “surprise billing” legislation that addresses out-of-network provider reimbursement and cost sharing). While detailed consideration of these additional policy reforms is outside of the scope of this paper, they illustrate that there is a wide array of ways that states may work to improve consumers’ access to affordable coverage and care.

⁴³ Legislative Analyst’s Office (May 15, 2019). Governor’s May Revision Update: Health Insurance Affordability Proposals. Retrieved November 13, 2019, from <https://lao.ca.gov/Publications/Report/4047>.

Detailed results and discussion

QUANTITATIVE SIMULATION RESULTS

Figure 10 on the following page summarizes baseline market characteristics plus the parameters and market-wide impacts for each policy type under the Composite market composition scenario, with each policy's parameters balanced to a fixed state funding cost of \$20 per individual market member per month. Results are boxed and bolded in cases where one policy has a clear advantage over the other two with respect to a given metric (for a fixed state contribution).

There are several key takeaways:

- **Volatility risk:** Traditional reinsurance leads to the greatest reduction in relative volatility, both for net claims PMPM across the entire market (row p) as well as for the average simulated loss ratio for issuers in the market (row l). As modeled, uniform coinsurance slightly increases *relative* volatility (i.e., coefficient of variation) as a percentage of expected claims by capping coinsurance for claims above \$1 million, but still reduces the *absolute* level of volatility in dollars (i.e., standard deviation of claims, row o) by reducing the expected claim level. Wraparound subsidies have no direct impact on volatility, because they are provided directly to members at the point of sale (bypassing issuers entirely), and our analysis holds the overall composition of market enrollment static between policy scenarios.
- **Overall premium impact:** Uniform coinsurance leads to the greatest reduction in average market premiums, including the benchmark (second-lowest) silver premium (rows f and h). Wraparound subsidies are a close second place with respect to the benchmark silver premium impact, but drive the smallest impact on the average market premium net of all subsidies.
- The enhanced effectiveness of both uniform coinsurance and traditional reinsurance ("Premium-Impact-to-State-Funding-Cost Ratio," row w) is attributable to reduced claim costs in turn reducing the dollar value of issuers' PMPM risk/profit margins (while holding margins constant as a percentage of revenue). This multiplier effect—which we discuss in depth later in this report—does not apply in the case of PMPM subsidies.
- **Impact on the minimum cost of coverage:** Wraparound subsidies lead to the most affordable minimum cost of coverage for non-APTC-eligible individuals (i.e., greatest reduction to the lowest-cost bronze premiums, row j), at nearly double the modeled impact for traditional reinsurance.
- Wraparound subsidies come in a close second place after uniform coinsurance with respect to the impact on the benchmark silver premium (row h), and are effectively tied with respect to the impact on low-cost premiums for silver plans purchased *off-marketplace* (row i). (Our analysis assumes that issuer rate loads for unpaid federal CSR payments are applied solely to silver plans purchased on-marketplace, so that unsubsidized consumers have access to "mirrored" off-marketplace plans at a lower cost. This was the most common method endorsed by states following termination of CSR payments in the fall of 2017.⁴⁴)

While the modeling outputs are the result of a \$604 baseline statewide average premium, \$20 PMPM state funding cost, and other specified policy parameters, our key directional conclusions are consistent under alternate specifications thereof. We discuss results for the Medicaid Expansion and Non-Expansion scenarios and compare them to the Composite scenario later in this report. For a demonstration of how the results vary in magnitude (but retain the same directional relationships) as the state funding cost and policy parameters are adjusted, please refer to Figures 26, 27, and 28 in Appendix A.

⁴⁴ Commonwealth Fund (October 27, 2017). States Step Up to Protect Consumers in Wake of Cuts to ACA Cost-Sharing Reduction Payments. Retrieved November 8, 2019, from <https://www.commonwealthfund.org/blog/2017/states-step-protect-consumers-wake-cuts-aca-cost-sharing-reduction-payments>.

**FIGURE 10: POLICY OPTION MARKET IMPACTS (\$20 PMPM STATE FUNDING COST)
COMPOSITE SCENARIO (EXPANSION AND NON-EXPANSION COMBINED)**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

MEASURES	Variations on 1332 Reinsurance Waiver						
	BASE No additional waiver funding	TRADITIONAL REINSURANCE 58.6% coinsurance on annual claims between \$75,000 and \$500,000		UNIFORM COINSURANCE 14.9% coinsurance on all claims up to \$1 million		WRAPAROUND PMPM SUBSIDY \$57 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)	
Market Population Characteristics							
	VALUE						
(a) Enrollment (average monthly lives)	153,000						
(b) % of Population Eligible for APTCs	72%						
(c) Avg. Age Rating Factor	1.695						
(d) Avg. Plan Liability Risk Score	1.570						
Premium Impacts							
	VALUE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE
(e) Avg. Issuer Premium PMPM (before all subsidies)	\$604	\$541	-10%	\$522	-14%	\$604	0%
(f) Avg. Member Premium PMPM (net of all subsidies)	\$247	\$224	-9%	\$223	-10%	\$227	-8%
(g) Avg. Silver Prem. PMPM, age 40 (non-APTC-eligible)	\$492	\$441	-10%	\$426	-14%	\$435	-12%
(h) Benchmark Silver Prem. PMPM, age 40 (non-APTC-eligible)	\$457	\$415	-9%	\$395	-14%	\$400	-13%
(i) Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$412	\$374	-9%	\$356	-14%	\$354	-14%
(j) Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$343	\$311	-9%	\$296	-14%	\$285	-17%
(k) Avg. Issuer Loss Ratio (claims net of risk adj.)	80%	79%		79%		80%	
(l) % Change in Volatility of Avg. Issuer Loss Ratio	n/a	-11%		+1%		0%	
Claims Impacts							
(m) Gross Claims PMPM (before waivers and HCRP)	\$483						
(n) Net Claims PMPM (net of waivers and HCRP)	\$483	\$428	-11%	\$411	-15%	\$483	0%
(o) % Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-28%		-15%		0%	
(p) % Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-19%		+0%		0%	
Implementation and Funding							
(q) Key Implementation Requirements	n/a	1332 waiver				State-Based Exchange	
(r) Total Funding Cost PMPM	\$0	\$55		\$72		\$20	
(s) APTCs PMPM	\$357	\$318	-11%	\$299	-16%	\$357	0%
(t) Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$36		\$53		\$0	
(u) State Funding Cost PMPM	\$0	\$20.00					
(v) Federal Responsibility %	n/a	64%		73%		0%	
(w) Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.16		1.21		1.00	

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

Results by issuer profile

Figure 12 summarizes the Composite scenario results from an issuer perspective, demonstrating the impact of each policy on required premium levels and volatility exposure across different issuer unit cost and population health status (morbidity) profiles.

Issuer-level results are provided for two different methods of allocating enrollees to issuers, with each of these sets of issuers independently summing to 100% market share. We show issuer level impacts under both the “representative” set of issuers, whose premiums inform the market-wide results from Figure 10, as well as for an illustrative “symmetrical” set of issuers. Each set of issuers balances to the same baseline market-wide average claim cost and premium level, but differs with respect to the underlying issuers and the profiles thereof.

The symmetrical set is populated by nine illustrative issuers—each with equal market share—representing every possible combination of unit cost (below-average, average, and above-average) and morbidity (low, average, and high). The sole purpose of the symmetrical set is to illustrate how pricing requirements, volatility, and policy impacts differ as unit cost and morbidity are varied, while holding all other issuer characteristics constant for clarity of interpretation.

In contrast, the representative set is intended to reflect a more typical spread in premiums between price leaders and the market average, and thereby support meaningful estimates regarding the impact of each policy option on the benchmark silver plan, federal premium subsidies, and the lowest-cost bronze plan. We achieved this by disproportionately weighting enrollment in the “representative” set of issuers toward issuers offering lower-cost coverage and assuming a modest correlation between unit cost and morbidity (e.g., due to narrow vs. broad provider network strategies). As a result, the average silver premium offered by the price leader in the representative set (our proxy for the benchmark silver premium, offered by Issuer A) is only 7% below the market average, compared to 17% under the symmetrical set (Issuer G).

**FIGURE 12: AGE 40 SILVER PREMIUMS (NON-APTC-ELIGIBLE) BY POLICY AND TYPE OF ISSUER
COMPOSITE SCENARIO (EXPANSION AND NON-EXPANSION COMBINED, \$20 STATE FUNDING COST)**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

ISSUER PROFILE				BASE		Variations on 1332 Reinsurance Waiver					
ID	MORBIDITY	MEDICAL UNIT COST	MARKET SHARE	SILVER PREM. PMPM (AGE 40)	RELATIVE PREM.	TRADITIONAL REINSURANCE		UNIFORM COINSURANCE		WRAP-AROUND PMPM SUBSIDY	
						Δ IN SILVER PREM. PMPM (AGE 40)		Δ IN SILVER PREM. PMPM (AGE 40)		Δ IN SILVER PREM. PMPM (AGE 40)	
"Representative" Set of Issuers*											
A	Low	14% below avg.	33%	\$457	0.93	(\$42)	-9%	(\$62)	-14%	(\$57)	-13%
B	Average	1% above avg.	33%	\$498	1.01	(\$51)	-10%	(\$67)	-14%	(\$57)	-12%
C	High	1% above avg.	25%	\$499	1.01	(\$54)	-11%	(\$68)	-14%	(\$57)	-11%
D	High	16% above avg.	8%	\$582	1.18	(\$71)	-12%	(\$79)	-14%	(\$57)	-10%
Grand total (entire market)			100%	\$492	1.00	(\$51)	-10%	(\$67)	-14%	(\$57)	-12%
Illustrative Symmetrical Set of Issuers											
E	Low	15% below avg.	11%	\$454	0.92	(\$42)	-9%	(\$62)	-14%	(\$57)	-13%
F	Average	15% below avg.	11%	\$431	0.88	(\$40)	-9%	(\$58)	-14%	(\$57)	-13%
G	High	15% below avg.	11%	\$409	0.83	(\$38)	-9%	(\$55)	-14%	(\$57)	-14%
H	Low	Average	11%	\$493	1.00	(\$48)	-10%	(\$67)	-14%	(\$57)	-12%
I	Average	Average	11%	\$492	1.00	(\$50)	-10%	(\$67)	-14%	(\$57)	-12%
J	High	Average	11%	\$491	1.00	(\$53)	-11%	(\$67)	-14%	(\$57)	-12%
K	Low	15% above avg.	11%	\$532	1.08	(\$55)	-10%	(\$72)	-14%	(\$57)	-11%
L	Average	15% above avg.	11%	\$553	1.12	(\$62)	-11%	(\$75)	-14%	(\$57)	-10%
M	High	15% above avg.	11%	\$573	1.16	(\$70)	-12%	(\$78)	-14%	(\$57)	-10%

Notes:

Silver premiums in this table represent on-marketplace rates for a 40-year-old nonsmoker who does not receive federal premium subsidies.

Values are rounded.

The "representative" set of issuers isn't necessarily representative of the average issuer profiles and market shares in an individual QHP marketplace. It is designed to produce a more typical spread between low-cost and average premiums than in the symmetrical market, based on weighting enrollment toward lower-cost plans and assuming some correlation between unit cost and morbidity (e.g., due to narrow vs. broad network strategies).

Figure 12 illustrates several key takeaways with respect to the issuer-level impacts of each policy:

- Under traditional reinsurance, lower-cost issuers see the least reduction in required silver premiums (-9%), while premiums for higher-cost issuers (e.g., D and M) experience the greatest reduction (-12%). The net effect is to compress both the percentage distance and the absolute distance in dollars between the highest-cost and lowest-cost premiums.
- Under uniform coinsurance, all issuers see the same proportional reduction in required silver premiums (-14%). This proportionally reduces the absolute distance, measured in dollars, between premiums, but has no effect on the percentage distance between plans.
- Under the wraparound subsidies option, all premiums receive the same absolute dollar reduction, which has the greatest proportional impact on lower-cost premiums (e.g., -13% for issuer A's silver plan) and the least proportional impact on higher-cost premiums (e.g., -10% for issuer D's silver plan), increasing the percentage distance between plans.
- As previously seen in Figure 10 above, uniform coinsurance has the greatest impact on silver premiums, both on average and as offered by the lowest-cost issuer (i.e., issuer A), at -14%.

Additionally, the illustrative symmetrical market results provide insights into the risk and required cost of coverage for different issuer profiles:

- Under our baseline scenario (prior to application of any state reform policy), the morbidity profile of issuers' member populations has little impact on their required premium rates for issuers at average unit cost levels, implying a reasonably balanced substitution between claim costs and risk adjustment. In our testing, this result remains robust under several alternate ways of defining morbidity and assigning members to the high and low morbidity profiles.
- Traditional reinsurance upsets this balance slightly, by reducing claim costs by a greater degree for issuers with above average morbidity profiles, leading to a slight premium advantage (at average unit cost levels) for high morbidity issuers.⁴⁵ States implementing a reinsurance program can either choose to ignore this imbalance or address it by adjusting the operation of the risk transfer program. We discuss this latter option in more depth later in this report.
- Independent of any specific state policy chosen, the impact of unit cost on required premiums varies with morbidity, with increased morbidity amplifying the impact of unit cost variation in either direction. At below-average unit cost levels, it is advantageous for plans to enroll members with above-average morbidity, because risk transfer receivables are indexed to the average premium level (which reflects average unit cost) while claim levels reflect lower unit costs. Conversely, at above-average unit cost levels, risk transfer receivables are insufficient to compensate for the increase in claim costs associated with high morbidity. This phenomenon is a function of the federal risk adjustment transfer formula and it is apparent in that the high-morbidity/low-unit-cost issuer profile (G) is able to offer coverage at lower rates than all other profiles in our simulation, while the highest required rates are those for the high-morbidity/high-unit-cost issuer profiles (D and M).

⁴⁵ Reinsurance also has a greater proportional impact on issuers with above-average unit costs.

Medicaid Expansion and Non-Expansion market scenarios

Figures 13 and 14 show a high-level summary of simulated policy impact results for each of the Medicaid Expansion and Non-Expansion market scenarios (for which 68% and 76% of enrollees are assumed to be eligible for federal premium subsidies, respectively⁴⁶). Detailed results for these scenarios can be found in Figures 29 and 30 in Appendix A.

FIGURE 13: POLICY OPTION MARKET IMPACTS (\$20 PMPM STATE FUNDING COST)

MEDICAID EXPANSION SCENARIO

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

MEASURES	Variations on 1332 Reinsurance Waivers				
	BASE No additional waiver funding	TRADITIONAL REINSURANCE 55.3% coinsurance on annual claims between \$75,000 and \$500,000	UNIFORM COINSURANC E 13.5% coinsurance on all claims up to \$1 million	WRAPAROUND PMPM SUBSIDY \$49 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)	
Market Population Characteristics					
(a)	% of Population Eligible for APTCs	68%			
Implementation and Funding					
(b)	Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$29	\$41	\$0
(c)	State Funding Cost PMPM	\$0	\$20.00		
(d)	Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.14	1.18	1.00
Premium Impacts					
(e)	Avg. Issuer Premium PMPM (before all subsidies)	\$549	-10%	-12%	0%
(f)	Avg. Member Premium PMPM (net of all subsidies)	\$270	-8%	-9%	-7%
(g)	Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$402	-9%	-12%	-12%
(h)	Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$370	-9%	-12%	-13%
(i)	Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$308	-9%	-12%	-16%
(j)	% Change in Volatility of Avg. Issuer Loss Ratio (claims net of risk adj.)	n/a	-13%	+1%	0%
Claims Impacts					
(k)	Net Claims PMPM (net of waivers and HCRP)	\$439	-11%	-14%	0%
(l)	% Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-27%	-13%	0%
(m)	% Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-18%	+0%	0%

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

⁴⁶ The assumed percentage of the population eligible for APTC subsidies is based on the weighted average APTC eligible population (as a percentage of the entire risk pool, on and off-marketplace) across all Medicaid Expansion and/or Non-Expansion states included in each market composition scenario. See the "Data and methodology" section for additional details, including the list of included states by scenario.

FIGURE 14: POLICY OPTION MARKET IMPACTS (\$20 PMPM STATE FUNDING COST)**NON-EXPANSION SCENARIO**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)
 Variations on 1332 Reinsurance Waiver

MEASURES	BASE No additional waiver funding	Variations on 1332 Reinsurance Waiver		
		TRADITIONAL REINSURANC E 62.3% coinsurance on annual claims between \$75,000 and \$500,000	UNIFORM COINSURANC E 17.5% coinsurance on all claims up to \$1 million	WRAPAROUND PMPM SUBSIDY \$70 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)
Market Population Characteristics				
(a)	% of Population Eligible for APTCs		76%	
Implementation and Funding				
(b)	Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$45	\$76
(c)	State Funding Cost PMPM	\$0		\$20.00
(d)	Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.19	1.28
Premium Impacts				
(e)	Avg. Issuer Premium PMPM (before all subsidies)	\$674	-11%	-16%
(f)	Avg. Member Premium PMPM (net of all subsidies)	\$221	-11%	-12%
(g)	Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$530	-10%	-16%
(h)	Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$470	-10%	-16%
(i)	Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$391	-10%	-16%
(j)	% Change in Volatility of Avg. Issuer Loss Ratio (claims net of risk adj.)	n/a	-8%	+2%
Claims Impacts				
(k)	Net Claims PMPM (net of waivers and HCRP)	\$540	-12%	-17%
(l)	% Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-28%	-16%
(m)	% Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-18%	+2%

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

As these scenarios demonstrate, the core directional conclusions we discussed above for the Composite scenario hold up under both types of state market profile. However, differences in magnitude by market type offer insight into the interplay between state market characteristics and the effects and effectiveness of each policy scenario.

- **Risk pool and gross premiums:** On average, states that expanded Medicaid captured an older yet healthier (i.e., less morbid) pool of enrollees than states that did not expand Medicaid. As illustrated in rows e and j of Figures 13 and 14, this results in lower claim costs and required premiums in Medicaid Expansion states, all else equal. This in turn allows for a greater proportional impact on premiums for the same *total* cost of funding (federal plus state, rows b and c).
- **Subsidized populations and federal funding:** Medicaid Expansion states have lower funding ratios because a greater proportion of enrollees are ineligible for federal APTC premium subsidies. This results in fewer pass-through funds being generated per dollar of state funding. These states must contribute a higher state funding cost per enrollee (across the entire pool) to have the same impact on unsubsidized enrollee premiums as in an otherwise comparable Non-Expansion state.
- **Premium-impact-to-state-funding-cost ratio:** Because there are more federally subsidized enrollees to generate pass through funds for every dollar of state funds, the average premium impact per dollar of state funds is significantly

higher for both traditional reinsurance and uniform coinsurance under the Non-Expansion scenario than for Medicaid Expansion states (row d, wraparound subsidies always have a 1.00 multiplier), amplifying these policies' advantages in Non-Expansion states and diminishing their advantages in states that expanded Medicaid.

For the Medicaid Expansion scenario, the diminished multiplier for claim-based policies means uniform coinsurance no longer beats out wraparound subsidies for the benchmark silver plan (row g in Figure 13), while wraparound subsidies now show a slight advantage over uniform coinsurance for low-cost off-marketplace silver plans (row h).

For the Non-Expansion scenario, a higher multiplier for uniform coinsurance leads it to pull ahead of wraparound subsidies for low-cost off-marketplace silver plans and extends its existing advantage for the benchmark silver (rows h and g in Figure 14).

Premium impact amplification when using state and federal funds to reduce claims

The difference in premium impact effectiveness for reinsurance and coinsurance policies over premium subsidies is attributable to a multiplier effect whereby funds used to reduce claims also drive a proportional reduction in the dollar value of the margin that issuers must retain to cover profit and risk (assuming this margin is held constant as a percentage of premium). See Figure 15 for an illustration of this effect.

FIGURE 15: DEMONSTRATION OF PREMIUM IMPACT AMPLIFICATION WHEN USING FEDERAL FUNDS TO REDUCE CLAIMS

COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

Variations on 1332 Reinsurance

Waivers

MEASURES	TRADITIONAL REINSURANC E	UNIFORM COINSURANC E	WRAPAROUND PMPM SUBSIDY	CALCULATION
Starting Values				
(a) Starting Gross (issuer) Premium		\$604		From Composite scenario *
(b) Starting APTCs		\$357		From Composite scenario *
(c) Starting Net (enrollee) Premium		\$247		= (a) - (b)
Impacts to Claims and Issuer Premiums				
(d) Value of Claims Ceded Under 1332 waiver	\$55	\$72	n/a	From Composite scenario *
(e) Reduction in Federal Tax and Fee Revenue (5% of premium)	\$3	\$4	n/a	= (d) / (1 - 12%) x 5%
(f) Reduction in State Tax and Fee Revenue (2% of premium)	\$1	\$2	n/a	= (d) / (1 - 12%) x 2%
(g) Reduction in Issuer Profit/Risk Margins (5% of premium, before income tax)	\$3	\$4	n/a	= (d) / (1 - 12%) x 5%
(h) Issuer Premium Reduction	\$62	\$82	n/a	= (d) + (e) + (f) + (g)
Impacts to APTCs and Member Premiums				
(i) Reduction in Federal APTC Subsidies	\$39	\$58	n/a	From Composite scenario *
(j) Value of State Premium Subsidies	n/a	n/a	\$20	From Composite scenario *
(k) Member Premium Reduction	\$23	\$24	\$20	= (h) - (i) + (j)
Funding Costs and Impact Ratio				
(l) Total Required Funding	\$56	\$73	\$20	= (d) + (f) + (j)
(m) Federal Pass-through Funds (net of offsets)	\$36	\$53	n/a	= (i) - (e)
(n) Required State Funding	\$20	\$20	\$20	= (l) - (m)
(o) Premium-Impact-to-State-Funding-Cost Ratio	1.16	1.21	1.00	= (k) / (n)

* Note: All values not calculated on this table come from the Composite market simulation scenario. Please refer to the "Data and methodology" section of this report for additional information.

As Figure 15 demonstrates, a \$72 reduction in PMPM claim costs for uniform coinsurance (row d) results in an \$82 reduction in the average monthly issuer premium (row h). While some of this reduction comes from reduced federal and state tax revenue (rows e and f) and therefore contributes to the total funding cost, the \$4 reduction in issuers' PMPM profit and risk margins (row g, held constant at 5% of revenue before income tax) is essentially free to the state. Furthermore, this impact is leveraged for each dollar of state funding through the use of federal pass-through funds to also reduce claims (and therefore PMPM profit/risk margins). Because federal pass-through payments increase with the proportion of enrollees eligible for federal subsidies, this leveraging impact is therefore more pronounced in our Non-Expansion market than the Medicaid Expansion market.

Because uniform coinsurance allocates a constant proportion of coinsurance payments to all plans, including lower cost plans such as the benchmark silver plan, it is more efficient than traditional reinsurance (which disproportionately allocates policy funds to the highest cost issuers) at reducing APTCs and therefore generating federal pass-through funds. This explains why we project a higher premium-impact-to-state-funding cost ratio for uniform coinsurance than traditional reinsurance.

No such multiplier applies in the case of wraparound subsidies, such that our simulation shows a dollar-for-dollar correspondence between the state funding contribution and premium impacts, regardless of the market profile.

The following sections dive deeper into these results and potential considerations with respect to policy implementation and market impacts.

STAKEHOLDER PERSPECTIVES: HOW DO BENEFITS AND TRADE-OFFS VARY BY STAKEHOLDER?

Each stakeholder involved with a state's QHP marketplace comes to the table with its own interests. Furthermore, the impacts of each policy under consideration may vary with respect to the benefits and trade-offs that accrue by type of stakeholder. In this section, we revisit the stakeholder perspectives that we first walked through earlier in this report, for an extended examination of the potential advantages and disadvantages of each policy from several different stakeholder perspectives:

- Individual consumers (both those who receive federal subsidies, and those who do not)
- Issuers offering QHPs (separately for lower-cost/morbidity and higher-cost/morbidity issuers)
- Healthcare providers
- Reinsurers
- Non-beneficiaries responsible for contributing toward funding (e.g., taxpayers, those enrolled in employer group coverage)
- State governments

Individual consumers

By reducing the cost of coverage in the individual QHP market, all three policy options have the potential to benefit consumers. However, consumers may differ with respect to their priorities and preferences, and the benefits of each option accrue differently depending on whether a given consumer is already eligible for federal premium subsidies (i.e., APTCs).

Individuals and families who qualify for APTCs are unlikely to see reductions in out-of-pocket premiums for the benchmark silver plan from traditional reinsurance, but those selecting plans richer and/or more expensive than the benchmark silver plan could see their net premiums drop. Of all three options considered, traditional reinsurance produces the smallest reduction to the (relatively lean) benchmark silver plan premium against which federal APTC subsidies are indexed, but leads to the greatest reduction in higher-cost plan premiums relative to the benchmark. This makes higher-cost plans more affordable on an after-subsidy basis. Furthermore, by reducing both absolute claim volatility and relative claim and loss ratio volatility in the market, traditional reinsurance may be the most likely to encourage reluctant issuers to enter the market, increasing the options available to consumers.

In our simulation, uniform coinsurance produces the greatest overall benefit to consumers in terms of average premium reduction (across both those eligible and ineligible for federal subsidies). Coinsurance also offers a balance between the advantages of traditional reinsurance (discussed above) and wraparound subsidies (discussed below).

Of all three options considered, wraparound PMPM subsidies offer the greatest benefit to cost-conscious consumers not already eligible for federal premium subsidies by driving the largest proportional reduction to the least expensive plans, resulting in the lowest minimum cost of coverage for unsubsidized individuals.⁴⁷ At the same time, PMPM subsidies increase the relative distance between low-priced offerings and other plans (by maintaining a constant distance in terms of absolute dollars) and therefore may be less appealing than the other policies for consumers who wish for a wide variety of affordable plans to choose from.

A wraparound subsidy policy is also the only option (of the three under consideration) that directly addresses (or has the ability to address) the subsidy cliff, the dynamics of which were illustrated in the “ACA individual market affordability” section above. By extending subsidies to a higher-income cutoff (such as 600% FPL to 700% FPL), the cliff is smaller, affects fewer consumers, and has a smaller impact as a percentage of household income for those most affected. Additionally, a state can elect to taper subsidies as income increases rather than cutting off aid abruptly, thereby greatly diminishing or even eliminating the cliff.

Issuers offering QHPs

By reducing the cost of coverage to consumers and therefore encouraging healthier and unsubsidized individuals to purchase coverage, all three policy options have the potential to benefit issuers through increased enrollment volume and revenues.

By reducing issuers’ responsibility for claim costs, both traditional reinsurance and uniform coinsurance reduce issuers’ claim risk (and associated risk-based capital requirements), allowing them to offer the same coverage with proportionally lower profit and risk margins.

Traditional reinsurance goes a step further by also reducing the level of claim and loss ratio volatility and therefore risk to which issuers are exposed, potentially allowing issuers to consider smaller profit and risk margins as a *percentage of revenue*, or encouraging risk-averse issuers to enter or remain in markets where they might otherwise stay out.

In contrast, wraparound PMPM subsidies that reduce a member’s premium costs at the point of sale bypass issuer costs entirely, having no direct impact on the risk borne by issuers or their expected revenue (though, as noted above, the reduced cost of coverage may encourage greater enrollment among healthier or cost-sensitive consumers).

While all three policy options have the potential to benefit all issuer types, the benefits don’t accrue evenly by issuer type, and this interaction differs by policy:

- Traditional reinsurance has the greatest proportional impact on claim costs and required premiums for issuers with above-average morbidity and/or unit costs, and the least impact on issuers with below-average morbidity and unit costs. The effect is to reduce the absolute and relative distance between required premium levels by issuer type. By eroding the competitive advantage of lower-cost issuers, this change is more likely to be welcomed by higher-cost/morbidity issuers than existing price leaders. In the section on “Incentives and secondary impacts” below, we discuss how this may limit issuers’ and providers’ incentives to control claim costs. Furthermore, to the extent that risk adjustment was previously well balanced and is left unmodified, the introduction of reinsurance can result in overcompensation of issuers with above-average morbidity populations, benefiting those issuers at the expense of those who attract healthier members. We discuss this phenomenon in more depth later in this report.
- Uniform coinsurance reduces claim costs for all issuers by approximately the same proportion. While this results in a greater *absolute* reduction to claim costs and required premiums for high-cost issuers and plans, it can be expected to leave the relative distances between plans more or less intact.
- In contrast, the wraparound PMPM subsidies considered in this report reduce a given consumer’s monthly premium by the same absolute amount regardless of which plan they select. While this maintains the absolute distance between premiums by issuer and plan, the effect is for the greatest reduction in the *relative* cost of coverage to accrue to the lowest-cost plans and issuers (such as those that employ a “narrow” provider network strategy), potentially increasing the ability of these plans to compete for market share.

⁴⁷ As modeled, wraparound subsidies have no direct impact on the cost of coverage for individuals eligible for federal premium subsidies (unless the program is specifically designed to supplement the federal subsidies, such as is the case in California).

Healthcare providers

By reducing the portion of claim costs that issuers are responsible for, both traditional reinsurance and uniform coinsurance may give healthcare providers additional leverage in contract negotiations, benefiting them in the form of higher reimbursement rates.

Inpatient hospitals' negotiating position may benefit in particular from reinsurance, as inpatient facility claims tend to represent a disproportionate share of the high-cost cases affected by traditional reinsurance, allowing facilities to negotiate for increased reimbursement at reduced cost to issuers.

Because wraparound PMPM subsidies have no impact on claim costs, they are less likely than the other policies to directly affect reimbursement negotiations by healthcare providers. However, by disproportionately reducing net premiums to consumers for the lowest-cost plans (which are often built around narrow networks), wraparound subsidies could increase the pressure for providers to join narrow networks as the enrollment in these plans grows.

Arguably the most significant benefit to healthcare providers is consistent across all three options: the potential for increased patient volume through greater enrollment in comprehensive individual insurance. With lower out-of-pocket premiums, more consumers are likely to retain coverage and those who have exited the market due to high prices may reenter the insured ranks. With reduced financial hurdles under comprehensive coverage, insured patients tend to get appropriate care sooner and providers can generally count on receiving payment for this care.⁴⁸

Lower prices can also induce consumers to purchase richer benefits than they otherwise might, particularly in the case of traditional reinsurance and uniform coinsurance (for which the relative price position of richer plans is maintained or improved). Enrolling individuals in richer coverage drives a secondary benefit to providers in that a smaller portion of their overall reimbursement comes from the patient. Collecting patient cost sharing is administratively burdensome for providers and can result in unpaid patient balances. To the extent reform policies increase benefit levels, providers may see a reduced financial risk from uncollectible patient copayments.

Reinsurers

Insurance companies that provide reinsurance coverage to issuers already offer risk mitigation products that behave like traditional reinsurance (albeit without the benefit of an external source of funding). Issuers decide when such arrangements are appropriate to manage their marketplace risk. Therefore, if the state offers its own program, it may "crowd out" this area of the insurance business. In contrast, the other two policies are less likely to crowd out private reinsurance: uniform coinsurance still leaves the majority of high-cost claim risk intact, while wraparound subsidies bypass issuer costs entirely without any direct impact on issuers' claim risk.

Non-beneficiaries responsible for contributing toward funding

In order to implement any of the three policy options discussed in this paper, a state must find a way to fund the cost of the policy. Typically, states with Section 1332 reinsurance waivers (i.e., traditional reinsurance) have funded their programs through some combination of general state tax revenue, an assessment on health care providers, and/or an assessment on health insurance coverage offered in the state's employer group market.

In all three cases, many of the individuals that bear the cost of funding are not direct beneficiaries of the policy, and therefore can be expected to prioritize whichever policy option achieves the state's stated objective at the lowest cost (both in the first year and over time). As discussed in the section of this report on state government perspectives below, states and their policy makers may differ with respect to which objectives they prioritize, which in turn may affect which (if any) of the policy options under consideration is optimal.

⁴⁸ Kaiser Family Foundation, *The Uninsured and the ACA: A Primer*, op cit.

State governments

State governments and the policy makers that represent them may consider the perspectives of many or all of the stakeholders represented here, in the interest of serving their constituents. Depending on the objectives and perspectives that state policy makers prioritize, there are advantages and disadvantages to all three policy options. This also puts state governments in the pivotal position of seeking to achieve an optimal balance of costs and benefits for all constituents.

- **State perspectives on traditional reinsurance:** To the extent that volatility in a state's market is causing reluctance among issuers to participate or to participate more broadly in the market, traditional reinsurance may represent an attractive way for a state to encourage more issuers to participate without prohibitive risk margins in their premiums. It could also increase consumers' selection of affordable coverage options (particularly for those who are subsidized). Reinsurance also has the benefit of having been successfully implemented and proven effective in many state marketplaces to date, both federally facilitated and state-based.

On the other hand, of the three types of policies evaluated in this report, traditional reinsurance carries the greatest potential financial risk to the state. For example, if policy parameters (i.e., attachment point, coinsurance, and cap) are set in advance rather than determined retrospectively, traditional reinsurance requires a state to assume a material degree of claim risk and funding cost uncertainty. Moreover, both traditional reinsurance and uniform coinsurance require the state to bear the cost of increased enrollment volume of unsubsidized enrollees (and the corresponding reduction of federal pass-through payments as a percentage of total policy funding) along with the risk of mis-estimating federal pass-through funding (though depending on the direction of the error, the state can benefit as well as be harmed). If, on the other hand, the state chooses to recalibrate the reinsurance parameters retrospectively in order to meet a funding target, then the estimation risk does not go away; the pricing risk would be borne entirely by issuers. The state may also need to consider that issuers with healthy populations or who effectively manage claim costs may see reinsurance as biased in favor of their competitors. As noted earlier, reinsurance tends to benefit higher-cost/higher-morbidity issuers (see Figure 12 above).

Finally, reinsurance also runs the risk of reducing incentives for issuers to manage high-cost claims, while making it easier for healthcare providers to negotiate generous outlier provisions, potentially leading to increases in the frequency and cost of high-cost events and negating some of the effectiveness of the policy. We discuss these and other potential secondary impacts of each policy in the next section.

- **State perspectives on uniform coinsurance**

Uniform coinsurance may be appealing to states that wish to prioritize a balance of benefits across disparate stakeholders. Of the three policies considered, uniform coinsurance has the greatest "bang for its buck" in terms of the overall premium impact for a given state contribution. It also stakes a middle ground between traditional reinsurance and wraparound subsidies with respect to its impact by plan, with a roughly uniform expected percentage impact on premiums across all plans and issuers.

While the degree of financing risk to the state is lower under uniform coinsurance than under traditional reinsurance, states wishing to achieve a target level of savings must still bear risk with respect to claim volatility, enrollment volume, and mis-estimation of federal pass-through funds. Additionally, in contrast to traditional reinsurance waivers, which have been approved and successfully implemented in many states, uniform coinsurance is untested. At the time of publication, no states have received approval for Section 1332 waivers to implement a uniform coinsurance program.

- **State perspectives on wraparound subsidies**

To the extent a state's primary concern is improving access to affordable coverage for consumers ineligible for federal premium subsidies, and the state has already implemented or is willing to implement a state-based exchange, wraparound PMPM subsidies offer arguably the most targeted and cost-effective way to reduce the minimum cost of coverage. It is the most direct transmission of state funding to the benefit of consumers. A defined-contribution subsidy policy of the type we modeled also has the advantage of incurring a fixed cost to the state for a given volume of enrollment, limiting the risk borne by the state versus a prospectively defined reinsurance or coinsurance program.

This option is also the only one of the three we modeled that enables states to *directly* target and eliminate the subsidy cliff caused by the structure of federal subsidies. While we modeled a wraparound subsidy policy that is fixed in advance and applies uniformly to federally unsubsidized consumers regardless of income, states can also choose to structure a defined benefit that is highest right at the start of the federal subsidy cliff (400% FPL) and then declines gradually as household income continues to rise. By targeting state funds directly to the consumers in greatest need of assistance, a state using this approach can achieve an even greater impact to the cost of coverage for qualifying individuals and families than is the case under any of the policies we modeled.

However, states that rely on the federal marketplace platform cannot implement wraparound subsidies without first transitioning to a fully state-based marketplace or otherwise implementing an alternate direct enrollment pathway outside of the federal platform, which could entail additional expense to operationalize. Direct-to-consumer subsidies may also have a smaller impact than the claim-based options on the average premium across the entire market, as they do not directly impact issuers' profit/risk margin requirements.

INCENTIVES AND SECONDARY IMPACTS

Our analysis models the direct impact of each policy on net claim costs and premium levels, assuming a fixed enrollment base, gross claim costs, a set of issuers and plans, and premium rating strategies. However, in practice each policy is liable to influence the incentives underlying consumer, issuer, and healthcare provider behavior, in ways that can both amplify the benefits of these policies but also increase their cost through side effects and moral hazard.

Enrollment volume and risk pool composition

By reducing the cost of coverage, all three policy options have the potential to encourage the purchase of coverage by healthier or cost-conscious consumers that may have exited the market or never enrolled. As the health of the risk pool improves, this may in turn allow for further reductions in the cost of coverage, amplifying the direct impact of each policy option on premium levels. Furthermore, to the extent that a state market is experiencing adverse selection and the resulting increasing premiums (sometimes referred to as a "death spiral"), these policy options have the potential to slow, stop, or even reverse the cycle. The degree to which a policy option will accomplish this depends heavily on the overall impact on consumer prices, particularly for currently unsubsidized enrollees. The sooner a program can be implemented, the greater the likelihood that a significant price impact can be made with the same dollar investment from the state, and the greater the potential for a meaningful enrollment response.

However, increased enrollment volume could also necessitate a greater funding expenditure by the state. If consumers entering the market are unsubsidized, the full cost of a reinsurance or uniform coinsurance program is borne by the state. If they are subsidized, the bulk of the cost of the program is returned to the state in the form of pass-through funding.

Incentives to control costs

Rather than all benefits of each policy accruing to consumers in the form of reduced premiums, in practice some fraction of state funds is likely to be directed toward increased profit margins for issuers (in absolute dollars or as a percentage of premium), increased profit margins for healthcare providers, and/or increases in healthcare utilization and waste.

Traditional reinsurance may allow healthcare providers (in particular inpatient facilities) to negotiate higher "outlier" provisions with issuers for which the state foots a substantial portion (perhaps even a majority) of the cost, increasing the frequency and cost of future catastrophic claims. Similarly, uniform coinsurance may allow healthcare providers to negotiate for higher reimbursement rates, at a discounted cost to issuers. Traditional reinsurance may also limit the incentive of issuers to identify and manage high-cost cases, by limiting the cost of these cases to issuers and therefore the benefit of intensive case management.

Consumer purchasing behavior

Each option is likely to also have an impact on consumer plan selection behavior. By reducing higher-cost coverage by a greater proportion than low-cost plans, traditional reinsurance may encourage consumers to purchase richer or more expensive coverage. In contrast, by reducing the price of inexpensive coverage by a greater proportion than higher-cost plans, wraparound PMPM subsidies may encourage consumers to select leaner coverage options, increasing the proportion of enrollees in bronze plans and plans with "narrow" provider networks. The impact of uniform coinsurance is likely to fall in between these two extremes.

Population health

By encouraging more individuals and families to purchase comprehensive health coverage, all three policies will increase consumers' access to necessary care. In a review of the research literature regarding insurance coverage and access to care, Kaiser Family Foundation concluded that individuals who are uninsured have difficulty accessing care, are less likely to receive regular preventive and outpatient care, and as a result are more likely to have negative health outcomes than those with comprehensive coverage.⁴⁹ Because of this link between insurance coverage and health outcomes, policies that reduce barriers to coverage—including the three policy types examined in this report—are likely to have a beneficial impact on population health.

INTERACTION WITH RISK ADJUSTMENT

One additional consideration when implementing a policy to reduce the cost of coverage is the interaction of such a policy with the state's ACA risk transfer program. Under the ACA, state marketplaces are risk-adjusted, whereby a portion of revenue is transferred from issuers who enroll a healthier-than-average mix of individuals to those who enroll a higher morbidity population. Transfers are calculated based on differences in risk scores by issuer, net of expected differences based on allowable rating characteristics, multiplied by the market-wide average premium (after carving out the estimated portion attributable to administrative costs).

Issuer-level results under the Composite market baseline scenario suggest a relatively well-calibrated transfer formula,⁵⁰ whereby the required premium level does not vary materially with morbidity for an issuer at the market average unit cost level. This result holds up under various different ways of simulating differences in morbidity by issuer.

Traditional reinsurance and risk adjustment

A traditional reinsurance policy has the potential to upset this balance by truncating issuers' costs for the highest risk members (with a reinsurance payment) without affecting the risk recognized by the federal HHS-Hierarchical Condition Category (HCC) risk adjustment model. To the extent that the operation of a state's risk adjustment program is not altered to compensate for this reduction in cost at the high end, it can lead to a "double-dipping" phenomenon where issuers with the highest-cost members are effectively reimbursed twice for these members' risk, once through risk adjustment, and again through reinsurance.

This result is apparent in our issuer-level results, which show traditional reinsurance favors issuers with higher-morbidity enrollees, such that these issuers are able to profitably offer the same coverage at a lower cost than issuers with healthier populations, despite holding unit costs constant at market average levels (see results for Issuer J in Figure 12 above).

At average unit cost levels under the simulated reinsurance policy, we estimate that risk transfers would overcompensate high-morbidity issuers and overcharge low-morbidity issuers by approximately 2% of the total transfer amount, on average. This bias is further compounded when issuer unit costs are correlated with morbidity. In Figure 12 above, we estimate reinsurance premium savings for high-morbidity issuers with high unit costs that are three percentage points higher than for low-morbidity issuers with low unit cost (e.g., 12% savings for issuers D and M versus 9% for issuers A and E).

In order to offset this form of over adjustment, states have at least two options to consider:

- **Risk model recalibration:** If the state operates its own risk adjustment program, rather than relying on the federal risk adjuster, the state can adjust the calibration of risk weights to account for the reduction in expected cost for condition categories associated with high-cost claims (e.g., transplants). This is in fact the approach the federal risk adjuster followed in 2018 when introducing a high-cost risk pooling (HCRP) program to pool 60% of claim costs above \$1 million. However, operation of a state-specific risk adjustment program can be costly and complex, such that as of the time of publication all 50 states plus the District of Columbia rely on the federal risk adjustment methodology.

⁴⁹ Ibid.

⁵⁰ Results are based on risk scores using the 2018 HHS-HCC risk model.

- **State flexibility transfer adjustment:** States that utilize the federal risk adjuster have an alternate—if blunt—tool at their disposal to offset over adjustment. Beginning with the 2019 Notice of Benefit and Payment Parameters, HHS introduced a “State Flexibility” option whereby states can apply for approval to dampen the dollar value of all transfers in their individual and/or small group QHP markets by up to 50%.

Under the reinsurance parameters from the Composite market simulation, we estimate that a state flexibility adjustment factor of 0.98⁵¹ would be sufficient to restore the initial balance with respect to risk adjustment for issuers whose unit costs match the market average.⁵² See Figure 16 for an illustration of how this could work in practice.

FIGURE 16: ILLUSTRATION AND CORRECTION OF REINSURANCE/RISK ADJUSTMENT "DOUBLE-DIPPING" EFFECT COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)

Numerical results are intended to illustrate interplay between reinsurance and risk adjustment, and are not intended as predictions for any state(s)

BASE SCENARIO						
No additional waiver funding, No state flexibility adjustment to risk transfers						
ISSUER	MORBIDITY	MEDICAL UNIT COST	NET CLAIMS, % of PREM	RISK TRNFER, % of PREM	SILVER PREM. PMPM (AGE 40)*	RELATIVE PREMIUM*
H	Low	Average	49.3%	(30.7%)	\$493	1.00
I	Average	Average	80.0%	(0.0%)	\$492	1.00
J	High	Average	109.8%	29.8%	\$491	1.00

TRADITIONAL REINSURANCE						
58.6% coinsurance on annual claims between \$75,000 and \$500,000, No state flexibility adjustment to risk transfers						
ISSUER	MORBIDITY	MEDICAL UNIT COST	NET CLAIMS, % of PREM	RISK TRNFER, % of PREM	SILVER PREM. PMPM (AGE 40)	RELATIVE PREMIUM
H	Low	Average	49.0%	(30.5%)	\$445	1.01
I	Average	Average	79.1%	(0.0%)	\$441	1.00
J	High	Average	108.6%	30.0%	\$438	0.99

REINSURANCE, WITH STATE FLEXIBILITY ADJUSTMENT TO RISK TRANSFERS						
58.6% coinsurance on annual claims between \$75,000 and \$500,000, 0.98 (about 2%) state flexibility adjustment to risk transfers						
ISSUER	MORBIDITY	MEDICAL UNIT COST	NET CLAIMS, % of PREM	RISK TRNFER, % of PREM	SILVER PREM. PMPM (AGE 40)	RELATIVE PREMIUM
H	Low	Average	49.4%	(30.1%)	\$442	1.00
I	Average	Average	79.1%	(0.0%)	\$441	1.00
J	High	Average	107.8%	29.1%	\$441	1.00

Note: Values are rounded. The small variations in required premium by morbidity level for average unit cost issuers under the base scenario (+/- \$1 PMPM) fall within the methodological margin of error with respect to how we defined low and high morbidity issuer profiles, and should not be considered meaningful in isolation. In contrast, the modest bias introduced by reinsurance (and offset through a state flexibility adjustment) is robust under the methodologies considered.

⁵¹ The required state flexibility adjustment will vary with the parameters of the state reinsurance program. In general, the greater the level of ceded claims under the program, the greater the magnitude of the required flexibility adjustment.

⁵² While this adjustment would address the imbalance reinsurance introduces for issuers at average unit costs, the relative bias of reinsurance savings in favor of issuers with high unit costs would still remain. Due to the revenue neutral design of the federal risk transfer formula (whereby payments and charges net out to \$0 across issuers), no state flexibility adjustment can produce unbiased risk transfers across all possible combinations of unit cost and morbidity.

Uniform coinsurance and risk adjustment

By reducing all issuers' claim costs by approximately the same percentage, a uniform coinsurance policy is unlikely to substantially alter the existing balance of risk adjustment in a state. This represents a potential advantage of uniform coinsurance over traditional reinsurance. To the extent that a larger fraction of issuers' premiums is attributable to fixed administrative costs rather than claim costs after applying the policy, there could be reason to consider a slight dampening of risk transfers (such as through the state flexibility adjustment factor discussed above). However, under the assumptions of our simulation, this impact is small enough to ignore.

Wraparound PMPM subsidies and risk adjustment

To the extent that premium subsidies are passed on to enrollees at the point of sale, bypassing issuers entirely, a wraparound PMPM subsidy policy should have no direct impact on risk adjustment or the balance thereof. This assumes that the market-wide average premium used to scale transfers is based on issuers' premium revenue prior to application of subsidies, as is already the case with federal premium subsidies (which also do not directly interact with risk adjustment).

On the other hand, if a state were to implement an alternate subsidy policy whereby *issuers* receive the subsidies and in turn are expected to pass on the savings to consumers in the form of reduced premium rates,⁵³ then substantial distortion would be introduced. This is because the market-wide average premium used to scale the magnitude of risk transfers would be reduced without any corresponding change in how claim risk is distributed across issuers, leading to under-compensation for issuers' relative risks. Furthermore, HHS only permits state flexibility adjustments to risk transfers that *reduce* the magnitude of transfers, such that there is no clear pathway by which a state that relies on the federal risk adjuster could meaningfully correct for this distortion.

IMPLEMENTATION CONSIDERATIONS AND REQUIREMENTS

In order for a state to incur the benefits and costs discussed above for any of the three policy types under discussion, it must first define the policy in detail and then successfully implement it. Below, we discuss several key considerations and requirements a state must address in order to implement each policy type.

Traditional reinsurance

A state considering traditional reinsurance can be reasonably assured of federal approval, given the track record of approvals and successful implementations of Section 1332 reinsurance waivers. At the time of publication, 13 states have received approval for reinsurance programs funded in part by federal pass-through funds, seven of which are in force as of the 2019 benefit year.⁵⁴

In general, a state that wishes to implement a Section 1332 reinsurance waiver must carry out the following steps. Note that these steps are not necessarily sequential, and the process may be iterative as results from a later step may inform revisions to earlier steps:

1. **Determine the objectives of the program:** In order for the state to maximize the balance between costs and benefits for a given policy, it must first understand which objectives have the highest priorities.
2. **Set reinsurance parameters:** The state must also determine the design and estimate the parameters of its reinsurance program (e.g., the corridor within which claims are insured and the coinsurance percentage for claim costs within the corridor).⁵⁵ The state must also decide whether to establish all parameters in advance or whether to set aside a fixed funding cost and establish a mechanism by which some parameters will be retroactively adjusted to balance reinsurance payments to the total value of appropriated funds.

⁵³ For example, a state with a federally facilitated marketplace may consider providing subsidies to issuers instead of at the point of sale in order to sidestep restrictions of the federal exchange platform, which does not support state-specific extensions of the federal subsidy structure. We discuss this approach—and why it is unlikely to be effective in practice—in more detail in the "Implementation considerations and requirements" section of this report below.

⁵⁴ CMS. Section 1332: State Innovation Waivers, op cit.

⁵⁵ While our analysis focuses on "traditional" reinsurance in which a portion of claims is ceded above a fixed attachment point, states may also consider alternative designs such as the condition-based reinsurance waiver implemented by Alaska. See CMS (July 11, 2017). Alaska: State Innovation Waiver under section 1332 of the PPACA, op cit.

3. **Determine state funding source(s):** The state must determine where state funds will be drawn from to finance the policy. In order to have a meaningful impact on the cost of individual market coverage, most or all of these funds should come from outside of the individual marketplace. For example, the state may draw on general funds, assessments on health coverage in employer group markets, provider taxes, or other sources.
4. **Pass enabling legislation:** The state must pass enabling legislation (or its equivalent⁵⁶) that gives the state authority to secure funds and implement the proposed waiver.
5. **Perform a feasibility study:** The state must also perform and document a feasibility study, including actuarial analyses and actuarial certifications that estimate the funding cost, premium, and APTC impacts of the 1332 waiver policy and demonstrate its expected compliance with the “guardrail” tests established under Section 1332 of the ACA.
6. **Apply for and obtain federal 1332 waiver approval:** States must submit a formal application to the federal government for approval to implement a 1332 waiver. The critical elements of a 1332 waiver application are spelled out in the final 1332 waiver regulations⁵⁷ and include documentation of the enabling legislation and feasibility study (with actuarial certifications) from the prior steps, along with detailed budget forecasts, implementation plans, and impact assessments, among other items. Completion of a waiver application is not a guarantee of federal approval.
7. **Provide guidance to issuers developing rates:** When states implement a new market policy that materially impacts the cost of offering coverage (such as a 1332 reinsurance waiver), issuers typically look to the state to provide guidance on the expected and/or preferred incorporation of the policy into the following year’s rates and rate filings. In order to measure and maximize the impact of the policy and ensure consistency in how rates are adjusted, states may wish to require issuers to incorporate a minimum or exact adjustment to their rates along with substantiating documentation that shows what rates the issuers would have filed in the absence of the policy.

Uniform coinsurance

The process for a state to implement a uniform coinsurance program is similar to that for a 1332 reinsurance waiver.

However, unlike “traditional” reinsurance waivers, uniform coinsurance programs do not yet have a proven track record of federal approval. At the time of publication, the authors are not aware of any states that have formally pursued such a program. It is also unclear how much support there will be for this policy among market stakeholders and the general public support.

Wraparound PMPM subsidies

Unlike the two claim-based policy types, wraparound PMPM subsidies do not rely on federal pass-through funds and therefore require neither a 1332 waiver application nor federal approval. However, the most straightforward way to introduce new premium subsidies for members at the point of sale is for the state to first have operational control over the marketplace through its own state-based exchange. The federal marketplace platform (HealthCare.gov) does not support state-specific adjustments to or extensions of the federal advanced premium tax credit subsidy structure. At the time of publication, 12 states (plus the District of Columbia) operate their own exchanges outside of the federal platform, and a handful of additional states have announced that they are considering or are in the process of transitioning to one.⁵⁸

⁵⁶ Under certain circumstances, states can use executive authority in place of legislation: CMS. Take Action using 1332 Waivers. Retrieved November 20, 2019, from <https://www.cms.gov/CCIIO/Programs-and-Initiatives/State-Innovation-Waivers/Downloads/Take-Action-Using-1332-Waivers.pdf>.

⁵⁷ The full text of the final regulations is available at <https://www.govinfo.gov/content/pkg/FR-2012-02-27/pdf/2012-4395.pdf>.

⁵⁸ Kaiser Family Foundation. State Health Insurance Marketplace Types, 2020. Retrieved November 8, 2019, from <https://www.kff.org/health-reform/state-indicator/state-health-insurance-marketplace-types/>.

For states that operate on the federal platform, there is not a clear and effective pathway for implementation of state-specific premium subsidies. To illustrate this, consider two ways a state on the federal platform might wish to extend premium subsidies, and the ways in which these two approaches are likely to be ineffective in practice:

- **Issuer subsidy:** First, a state on the federal platform may consider providing funds directly to issuers, under the requirement that they reduce consumer premiums correspondingly. While this can be done, it will lead to undesirable interactions with both risk adjustment and the rating factors used to vary premium rates by consumer. The magnitude of risk transfers is scaled to the average premium rate charged by issuers (prior to application of federal APTCs and other point-of-sale subsidies to members). By reducing issuers' premiums, an issuer subsidy policy would proportionally reduce the magnitude of risk transfers without any change to each issuer's relative claim costs, leading to a bias in the program where issuers with above-average morbidity populations are under-compensated and issuers with below-average morbidity populations are undercharged. Additionally, ACA rating rules restrict the ways in which premium rates can vary and require the use of multiplicative rating factors, such that it may be impossible for issuers to factor subsidies into rates properly while still complying with these rules. Finally, issuers are not permitted to vary the rates charged to consumers by income level. For this reason, an issuer subsidy could not be implemented as a wraparound benefit solely for those consumers not receiving federal subsidies, and would instead require federal approval of a 1332 waiver in order to recoup reduced federal APTC subsidies.
- **Post-purchase member rebate:** Alternately, a state on the federal platform may consider distributing subsidy funds directly to eligible consumers in the form of a rebate, after receiving proof that the consumer purchased qualifying coverage. However, such a program comes with substantial downsides that may limit its appeal to state policy makers. Implementing a post-purchase rebate program would likely entail substantial administrative complexity and costs. Additionally, it would require consumers to pay the full price of coverage prior to receiving rebates, and the value of rebates to which consumers are entitled would not be visible to them at the point of sale. Furthermore, ensuring consumer awareness of the program would be a challenge, which could require costly consumer awareness campaigns and potentially limit the effectiveness of the subsidies to encourage enrollment and affect purchasing behavior.

For this report, we have modeled a wraparound subsidy that applies equally to all consumers not eligible for federal premium subsidies, which varies with the age of the consumer (according to the same age adjustment factors used to adjust premium rates), but which does not otherwise vary by plan, by rating area, or with the overall level of premium rates in the market. While this scenario is intended to be broadly representative of wraparound subsidy policies and their impact on consumers' cost of coverage, there are several dimensions along which a state could design an alternate wraparound subsidy program.

- **Defined benefit versus defined contribution:** The wraparound policy that we modeled can be described as "defined contribution," in that the value of the subsidy provided by the state (for a given consumer age) is fixed in advance, and does not vary with premium levels in the marketplace. In contrast, the federal APTC subsidies are structured as a defined benefit, where subsidies float with the cost of the second-lowest-priced (i.e., benchmark) silver plan in each county, such that each APTC-eligible consumer's premium responsibility for that plan is fixed (based on income). For a given premium subsidy amount, both types of policies have similar direct impacts. However, they may differ in terms of cost to the state, moral hazard risks, and their effectiveness at guaranteeing affordable coverage. For example, a defined benefit subsidy policy requires the state to accept a greater level of funding risk, and may create moral hazard risk where issuers can increase premiums and pass the cost on to the state (though as noted earlier, a competitive marketplace and effective rate review can help mitigate some of this risk). On the other hand, one advantage of a defined benefit subsidy policy is that it provides a mechanism for the state to guarantee access to affordable coverage, however the state wishes to define it (e.g., establish premium subsidies by rating area that guarantee a given minimum cost of coverage for the lowest-cost bronze plan).
- **Income testing:** The wraparound policy that we modeled applies equally to all consumers not already eligible for federal premium subsidies (APTCs). However, a state may instead prefer to vary eligibility for and the value of subsidies along with consumers' incomes, in order to prioritize premium assistance for those who need it the most. For example, this past June, California passed a bill establishing a wraparound extension of federal

ATPCs, in the form of defined-benefit subsidies for consumers with incomes between 400% FPL and 600% FPL, effective for benefit years 2020 through 2022.⁵⁹

- **Variation with rating characteristics:** We modeled a wraparound subsidy policy that varies with the age of the consumer (using the same age factors used to adjust premium rates), but the value of which is otherwise fixed. Alternately, a state could consider fixing the subsidy regardless of age, using a different method to vary subsidies by age, and/or varying the level of subsidies by plan type (e.g., increasing, reducing, or eliminating subsidies depending on the metallic level of the consumer's chosen plan), by rating area, or according to other rating characteristics (e.g., tobacco usage). The appropriate basis depends in large part on the state's objectives, the consumers it intends to benefit the most, and the types of plans it wishes to incentivize consumers to select.

SENSITIVITY OF RESULTS TO KEY ASSUMPTIONS AND MARKET CHARACTERISTICS

Every state ACA market is different, and while we address some of these differences through our three market composition scenarios, it's important to consider how results may vary under alternate market structures, policy designs, and modeling assumptions. In this section, we consider the sensitivity of results to variation across several key market, policy, and modeling assumptions.

Sensitivity to alternate funding levels and policy parameters

We performed several scenarios in which we varied the funding level and parameters used for each of the three policy types. We found that the directional conclusions regarding the comparative advantages of each policy type (i.e., the boxed "wins" by policy type in Figure 10 above) are unaffected by moderate variations in the chosen parameters. We found that as the attachment point for traditional reinsurance is reduced (while varying the coinsurance percentage to hold the state funding cost constant), results for key metrics fall in between the original traditional reinsurance results and those for uniform coinsurance (see Figure 26 in Appendix A). We found that required coinsurance parameters and associated premium impacts scale linearly as we vary the target state funding cost (holding attachment points constant—see Figures 27 and 28 in Appendix A). Our testing involved varying reinsurance attachment points, coinsurance percentages, and the value of the wraparound PMPM subsidies while targeting state funding costs ranging from \$10 PMPM to \$40 PMPM.

Sensitivity to premium spread and single issuer markets

We tested the impact of market composition by varying the number of issuers and the premium spread between them. The comparative advantage of wraparound subsidies to reduce the minimum cost of coverage is lessened in states with a smaller delta between the lowest-cost plan and the average cost of coverage and amplified in states with greater levels of premium variation. When modeling markets with only a single issuer, we see a higher federal responsibility as a percentage of the total funding cost (for the traditional reinsurance and uniform coinsurance policies) versus a market with additional issuers, increasing the comparative advantage of these policies over wraparound subsidies. This result is attributable to a higher benchmark silver premium—which is the basis for determining ATPCs and therefore federal pass-through payments—in single issuer markets (as a percentage of the statewide average premium), versus our simulation results for multi-issuer markets.

Sensitivity to claim trend

We ran our simulation under an alternate set of scenarios in which we only trended claims to benefit year 2018 (rather than 2020), and in which we balanced market-wide claim costs under the Composite scenario to the 2018 average individual QHP market claim cost nationwide (rather than trending our target to 2020). Under these alternate scenarios, baseline claim costs and market premiums were 10% to 13% lower than under the scenarios used to inform our primary results. Holding the state funding contribution steady at \$20 PMPM, we were able to support richer coinsurance parameters for the traditional reinsurance and uniform coinsurance policies, and all three policies resulted in greater reductions as a percentage of market-wide average premiums (increasing the magnitude of premium reductions by between 3.7% and 15.1% of the original modeled impacts, depending on the policy and market composition scenario). While the proportional magnitude of savings was higher for the specified state funding cost, our core directional conclusions remained robust under the alternate trend scenarios.

⁵⁹ Legislative Analyst's Office (May 15, 2019). Governor's May Revision Update: Health Insurance Affordability Proposals, op cit.

Sensitivity to proportion of market receiving federal premium subsidies

One key difference between our Medicaid Expansion and Non-Expansion market composition scenarios is the proportion of market enrollees assumed to be eligible for federal APTC premium subsidies (68% and 76%, respectively). We also tested the impact of adjusting only this assumption for the Composite market scenario while holding all other market composition characteristics constant.

Unsurprisingly, we found that a given state funding cost PMPM (assessed across all enrollees in a market) has a larger impact on premiums for non-federally subsidized consumers when there is a greater proportion of subsidized consumers to cover the state funding cost. More intriguingly, we also found that the relative advantages of the two claim-based policies (traditional reinsurance and uniform coinsurance) are more pronounced in a highly subsidized market (with a greater proportion of APTC enrollees), increasing their comparative advantages over wraparound PMPM subsidies with respect to overall premium impacts.

As discussed previously in the section on results for the Medicaid Expansion and Non-Expansion scenarios, this effect is attributable to a multiplier impact whereby federal pass-through payments indexed to premium reductions are used to reduce claims, but produce a greater impact to premiums after accounting for issuers' reduced profit/risk margin requirements, funneling back into additional federal pass-through payments as part of a virtuous cycle. Conversely, the direct impact of wraparound subsidies on the average market-wide consumer premium (including those eligible for federal subsidies) is by definition always equal to the state funding cost.

Sensitivity to issuer morbidity profile definitions

We tested different methodologies for defining enrollees' relative morbidity scores (RMSs) and assigning them to the high and low morbidity issuer profiles. We tested one approach that blends information from risk scores with additional indicators associated with morbidity that are less likely to be sensitive to provider coding practices (e.g., prior-year claim costs, enrollee plan type selections). We tested another approach in which RMSs are not normalized for enrollee age, resulting in a greater demographic skew between the low and high morbidity profiles. However, in all cases, the testing confirmed that high-level results are robust in both direction and magnitude under the alternative methodologies.

Sensitivity to required revenue formula and plan rating factors

We considered the impact of various alternatives to the formula and rating factors used for simulating issuers' required revenue and ACA-compliant premium rates by plan.

The premium impacts and comparative advantages of the two claim-based policies (traditional reinsurance and uniform coinsurance) are highly sensitive to assumptions regarding retention as a percentage of total revenue. We modeled two alternate scenarios representing extremes with respect to retention assumptions, while holding assumed traditional loss ratios under the baseline scenario constant at 80%:

1. **Maximal sensitivity scenario:** For this scenario, we targeted an 80% loss ratio based on a 20% profit/risk/expense margin as a percentage of gross revenue under both the baseline and all policies, and assumed no funding offsets related to state or federal taxes and fees. The effect of this set of assumptions is to produce \$10 of premium impact for every \$8 of state or federal funds used to reduce claim costs, amplifying the impact of total funding costs, and state funding costs in particular. Under this scenario, the advantages of the two claim-based policies are dramatically amplified relative to wraparound subsidies (which do not affect issuer retention). However, while illustrative, we consider the assumptions underlying this scenario to be extreme and unreasonable, as a substantial portion of issuers' retention is typically required to cover state and federal taxes and fees (which contribute to the total funding cost), and we consider it unreasonable to assume non-benefit expenses will be reduced substantially (if at all) by reinsurance and coinsurance transfer payments.
2. **Minimal sensitivity scenario:** For this scenario, we assume that PMPM retention from the baseline scenario (at an 80% traditional loss ratio) would remain fixed after application of the various policies. The effect of this assumption is for the overall premium impact to exactly match the total cost of state and federal funds (e.g. \$8 premium impact for every \$8 reduction to claims). As a result, the comparative advantages of the claim-based policy in terms of premium impacts is diminished versus our primary simulation results (which assume issuers charge a 5% profit/risk margin that is reduced along with net claim costs), improving the appeal of wraparound PMPM subsidies in comparison. However, as with the maximal sensitivity

scenario, we consider this scenario to be more illustrative than realistic, as we would expect most issuers in an actual marketplace to respond to reinsurance or coinsurance programs with proportional reductions to their profit and risk requirements.

We also assessed alternate approaches to setting the slope of issuers' rating factors by plan type, including one method derived from the average reported premium relativity for the lowest-cost plan by metallic level across 2019 individual QHP marketplaces,⁶⁰ and others in which we varied the magnitude of the cost-sharing reduction rate load for silver plans. Results for the scenario in which plan rating factors are based on actual 2019 market premium relativities are nearly indistinguishable from our primary results, in terms of both magnitude and directionality.

With respect to silver CSR rate loads, we found that federal pass-through funds and therefore the effectiveness of the two claim-based policies for a given state funding cost increase as the CSR rate load is amplified, and decrease when it is eliminated (e.g., in a scenario in which the cost of non-funded CSR subsidies is uniformly spread across all plan types). This is because a higher silver CSR rate load increases the cost of the benchmark silver plan and therefore federal APTC premium subsidies, all else equal, such that the same proportional reduction in claim costs and premium levels drives a larger impact to APTCs and therefore a larger federal pass-through payment.

⁶⁰ Kaiser Family Foundation, Average Marketplace Premiums by Metal Tier, 2018-2020, op cit.

Methodology and data

METHODOLOGICAL OVERVIEW

In order to evaluate the funding cost and expected impacts of state premium reduction policies on the cost of coverage, market risk, and market stakeholders, we developed and used a new model that we call the Premium Affordability and State Subsidy Impact Simulation Tool, or PremiumASSIST

PremiumASSIST leverages nearly 1 million lives of detailed individual QHP claim and eligibility/risk data (on and off-marketplace), adjusted to match the demographic, risk, and claim cost profile of a chosen target market. The model then assigns enrollees to issuers in order to simulate a risk-adjusted individual ACA marketplace comprised of one or more issuers offering qualified health plans at ACA-compliant premium rates based on expected financials, each of which may vary with respect to unit cost, enrollee population health status, and market share. Once we establish this synthetic market, we can then use the tool to simulate various state premium stabilization policies and policy parameters (e.g., traditional reinsurance, uniform coinsurance, wraparound subsidies) and model the impact on the cost of coverage, volatility of claim costs, and financial results for issuers, federal premium subsidies, and the net funding cost to the state (after federal pass-through funds).

The design and execution of this analysis can be broken down into seven main steps:

1. Gather detailed individual QHP claim and eligibility/risk data.
2. Reweight and adjust the detailed data to one of several representative market composition scenarios, in terms of demographics, population health status, plan selections, and claim costs.
3. Simulate a baseline individual ACA market comprised of multiple distinct issuers offering QHPs at ACA-compliant premium rates, subject to risk adjustment.
4. Simulate the direct effect of one or more premium reduction policies on net claims, risk adjustment, and the cost of coverage for issuers and enrollees.
5. Simulate the total (state plus federal) cost of funding for each premium reduction policy, the impact of the policy on federal APTC premium subsidies, and the resulting federal pass-through funds under a Section 1332 waiver (if applicable).
6. Use a Monte Carlo sampling methodology to measure volatility of net claims and issuer financial results before and after application of each premium reduction policy.

In the following sections, we walk through each of these steps in more detail.

INDIVIDUAL MARKETPLACE DATA

We relied on 824,000 unique lives (7,842,000 member months) of calendar year 2017 individual QHP claims and eligibility/risk data from Milliman's Consolidated Health Cost Guidelines™ Sources Database (CHSD) to populate our simulation. For 53% of these enrollees, we also had access to calendar year 2016 CHSD experience, which we used to inform our mapping of enrollees to high and low morbidity issuer profiles.

CHSD represents a multiyear, multi-line-of-business, longitudinal claims and enrollment data source for use in Milliman's creation of products, internal research, and client engagements, and is a key foundation of the Milliman Health Cost Guidelines. Several national and regional health plans contribute their annual enrollment and claims detail. While CHSD spans multiple lines of business for over 80 million unique members, we restricted our analysis to individual market ACA-compliant plans.

ADJUSTING TO A REPRESENTATIVE MARKET COMPOSITION

Our next step was to take the calendar year 2017 CHSD data, which is compiled from many different data contributors across the United States and may not be representative of any particular ACA market, and both standardize and adjust it to match one of several target market composition scenarios.

Establishing the representative market composition scenarios

For our analysis, we established three market composition scenarios against which the various policy scenarios were tested. The same data sources and methodology were used to establish the target characteristics of each market composition scenario. All differences are solely attributable to the set of states whose experience was considered and averaged to set these targets:

- **“Composite” scenario:** This scenario approximates the weighted average benefit year 2018 individual QHP market composition across 45 Medicaid Expansion and Non-Expansion states. The scenario is based on the benefit year 2018 demographic and risk profile averaged across nearly all states, excluding only the following:
 - We excluded Massachusetts and Vermont due to their “merged” markets that combine individual and small group enrollees into single risk pools.
 - We excluded Arkansas and New Hampshire for their unique approaches to Medicaid Expansion, which (as of 2018) enrolled beneficiaries of the states’ Medicaid Expansion programs on the individual QHP marketplace.
 - We excluded the District of Columbia, New York, and Utah for their custom age rating curves (or, in the case of New York, prohibition on age rating).
- **Medicaid Expansion and Non-Expansion scenarios:** Each of these scenarios is based on a subset of the states from the “Main” market composition scenario, limited to states which either had expanded Medicaid (Medicaid Expansion) or had not (Non-Expansion) as of the 2018 benefit year.

Figure 17 demonstrates the mapping by state to each of the three market composition scenarios. For each of these three scenarios, we then leveraged several data sources published by the HHS to set the targets for our adjusted market profile:

- **Benefit year 2018 open enrollment public use files:**⁶¹ These files summarize marketplace plan selections by state from benefit year 2018 open enrollment. We use these files to inform the assumed state-specific mix of marketplace enrollment by metallic level and CSR variation, as well as for information regarding the average premium responsibility of individuals eligible for federal APTC premium subsidies.
- **Benefit year 2018 risk adjustment report:**⁶² This report and its appendices provide insight into the average demographic composition and risk level of each state’s benefit year 2018 risk pool (as measured by allowable age rating factors and plan liability risk scores, respectively). In contrast to the other two data sets, these files encompass entire state risk pools (on and off-marketplace, combined) and can therefore be combined with effectuated marketplace enrollment to estimate the size of states’ off-marketplace populations. This report also includes information on market-wide average premium levels by state, which we are subsequently able to combine with loss ratio data to estimate average market-wide claim levels (as of benefit year 2018).
- **Benefit year 2018 effectuated enrollment report:**⁶³ This report summarizes monthly average effectuated enrollment by state marketplace across benefit year 2018, where enrollment is considered effectuated if and when and an enrollee’s premium is paid and coverage is in effect. In combination with the 2018 risk adjustment report, which captures enrollment for the entire risk pool, this report allows us to estimate the size of each state’s off-marketplace enrollment. We also use this report to inform the estimated proportion of each state’s marketplace enrollees that qualify for and receive federal APTC premium subsidies.

⁶¹ CMS. 2018 Marketplace Open Enrollment Period Public Use Files. Retrieved November 8, 2019, from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Marketplace-Products/2018_Open_Enrollment.html.

⁶² CMS (June 28, 2019). Summary Report on Permanent Risk Adjustment Transfers for the 2018 Benefit Year. Retrieved November 8, 2019, from <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Premium-Stabilization-Programs/Downloads/Summary-Report-Risk-Adjustment-2018.pdf>.

⁶³ CMS. Early 2019 Effectuated Enrollment Snapshot, op cit.

FIGURE 17: STATE INCLUSION BY MARKET COMPOSITION SCENARIO

STATE	COMPOSITE	MEDICAID EXPANSION*	NON-EXPANSION*	EXCLUSION NOTES*
Alaska	•	•		
Alabama	•		•	
Arkansas				Individual QHP risk pool includes Medicaid Expansion
Arizona	•	•		
California	•	•		
Colorado	•	•		
Connecticut	•	•		
District Of Columbia				Non-standard age rating factors
Delaware	•	•		
Florida	•		•	
Georgia	•		•	
Hawaii	•	•		
Iowa	•	•		
Idaho	•		•	
Illinois	•	•		
Indiana	•	•		
Kansas	•		•	
Kentucky	•	•		
Louisiana	•	•		
Massachusetts				Merged market
Maryland	•	•		
Maine	•		•	
Michigan	•	•		
Minnesota	•	•		
Missouri	•		•	
Mississippi	•		•	
Montana	•	•		
North Carolina	•		•	
North Dakota	•	•		
Nebraska	•		•	
New Hampshire				Individual QHP risk pool included Medicaid Expansion*
New Jersey	•	•		
New Mexico	•	•		
Nevada	•	•		
New York				No age rating
Ohio	•	•		
Oklahoma	•		•	
Oregon	•	•		
Pennsylvania	•	•		
Rhode Island	•	•		
South Carolina	•		•	
South Dakota	•		•	
Tennessee	•		•	
Texas	•		•	
Utah				Non-standard age rating factors
Virginia	•	•		
Vermont				Merged market
Washington	•	•		
Wisconsin	•		•	
West Virginia	•	•		
Wyoming	•		•	

*Note: Medicaid Expansion statuses and other market characteristics are expressed as of benefit year 2018.

Reweighting the raw data

With the market composition scenarios defined and with the associated target market characteristics in hand, we can then adjust the 2017 CHSD individual QHP experience to reflect the intended population composition. We achieve this through a sequential reweighting process:

1. **Start with CHSD data:** All three market scenarios start with the same CHSD individual QHP data set, which combines claim experience across both Medicaid Expansion and Non-Expansion states. For the purpose of our synthetic market simulation, all CHSD enrollee level data is combined, standardized, stripped of its original geographic identifiers, and treated as if it comes from a single state market, regardless of the original source.
2. **Reweight total enrollment by market status (on and off-marketplace):** Based on the target distribution of on-marketplace versus off-marketplace enrollment for the chosen market composition scenario, we apply relative weights to each of the on and off-marketplace enrollee populations (applied uniformly within each subgroup) to reproduce the target distribution.
3. **Reweight on-marketplace enrollment by plan and age:** For the subset of the population enrolled through the state marketplace, we then apply weights for each combination of plan type (i.e., metallic level and cost-sharing reduction variation) and age range (primarily 10-year bands for working age enrollees) in order to reproduce the target distribution by plan and age for the chosen marketplace composition scenario (while holding total on-marketplace enrollment steady).
4. **Reweight population morbidity within each combination of market status, plan, and age:** For our final reweighting adjustment, we subdivide each of the prior categories of enrollees (combinations of market status, plan, and age) into two halves, those whose plan liability risk scores (PLRSs) are below the median for their category, and those whose plan liability risk scores⁶⁴ are above the median. We then reweight uniformly across all enrollees in each of the below-median and above-median risk score groups, in order to reproduce the target plan liability risk score of the chosen marketplace composition scenario (in total across the entire reweighted pool).

Applying these weights to the CHSD individual QHP data results in an adjusted individual market population that matches the intended scenario profile: on-marketplace versus off-marketplace enrollment, the distribution of marketplace enrollment by plan and age, and the overall market morbidity level as measured by risk scores.

Figures 18 and 19 demonstrate these adjustments for the Composite market composition scenario. Corresponding figures for the Medicaid Expansion and Non-Expansion scenarios are provided in Appendix A.

⁶⁴ Under the 2018 HHS-HCC risk model.

FIGURE 18: CHSD INDIVIDUAL QHP POPULATION COMPOSITION, BEFORE REWEIGHTING

ENROLLMENT DISTRIBUTION							
ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE							
AGE BAND	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	TOTAL
Age < 18	0.6%	2.0%	1.4%	1.5%	1.2%	2.8%	9.5%
Age 18-25	0.3%	0.9%	0.6%	1.2%	1.5%	1.3%	5.8%
Age 26-34	0.6%	1.5%	1.0%	2.1%	2.2%	2.3%	9.7%
Age 35-44	0.6%	1.6%	1.1%	2.0%	2.0%	2.1%	9.5%
Age 45-54	0.8%	2.4%	1.4%	2.4%	2.1%	2.6%	11.7%
Age 55-64	1.2%	4.7%	2.5%	3.8%	2.7%	5.3%	20.3%
Age ≥65	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.2%
On-Marketplace Total	4.2%	13.1%	8.1%	12.9%	11.8%	16.5%	66.6%
Off-Marketplace Total							33.4%
Grand Total							100.0%

AVERAGE HHS-HCC PLAN LIABILITY RISK SCORE							
ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE							
AGE BAND	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	TOTAL
Age < 18	0.936	0.462	0.441	0.516	0.663	0.240	0.459
Age 18-25	1.293	0.627	0.596	0.766	0.746	0.318	0.645
Age 26-34	1.967	1.006	0.884	1.040	1.128	0.458	0.953
Age 35-44	2.045	1.129	1.049	1.282	1.416	0.566	1.152
Age 45-54	2.798	1.581	1.542	1.934	2.044	0.900	1.665
Age 55-64	3.766	2.115	2.294	2.759	2.799	1.332	2.243
Age ≥65	6.902	2.732	2.532	2.968	3.925	1.874	3.330
On-Marketplace Total	2.465	1.419	1.365	1.670	1.646	0.777	1.408
Off-Marketplace Total							1.486
Grand Total							1.434

**FIGURE 19: INDIVIDUAL QHP POPULATION COMPOSITION, AFTER REWEIGHTING
COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)**

ENROLLMENT DISTRIBUTION							
ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE							
AGE BAND	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	TOTAL
Age < 18	0.7%	0.7%	0.5%	1.0%	1.5%	3.2%	7.7%
Age 18-25	0.5%	0.9%	0.6%	1.4%	2.5%	1.8%	7.8%
Age 26-34	1.0%	1.5%	1.0%	2.2%	3.4%	3.7%	12.9%
Age 35-44	1.0%	1.5%	1.0%	2.2%	3.6%	3.7%	13.1%
Age 45-54	1.3%	2.0%	1.3%	3.0%	4.8%	4.6%	17.0%
Age 55-64	1.8%	2.8%	1.8%	4.0%	6.0%	6.3%	22.8%
Age ≥65	0.0%	0.1%	0.1%	0.2%	0.3%	0.2%	1.0%
On-Marketplace Total	6.3%	9.7%	6.2%	14.2%	22.3%	23.5%	82.2%
Off-Marketplace Total							17.8%
Grand Total							100.0%

AVERAGE HHS-HCC PLAN LIABILITY RISK SCORE							
ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE							
AGE BAND	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	TOTAL
Age < 18	1.102	0.483	0.459	0.537	0.690	0.250	0.491
Age 18-25	2.082	0.655	0.622	0.798	0.777	0.332	0.737
Age 26-34	2.225	1.051	0.925	1.089	1.180	0.481	1.008
Age 35-44	2.196	1.178	1.096	1.340	1.478	0.588	1.190
Age 45-54	3.417	1.648	1.607	2.018	2.131	0.942	1.788
Age 55-64	4.951	2.202	2.390	2.875	2.917	1.387	2.522
Age ≥65	7.161	2.847	2.634	3.092	4.098	1.963	3.357
On-Marketplace Total	3.146	1.474	1.475	1.792	1.870	0.797	1.571
Off-Marketplace Total							1.550
Grand Total							1.567

Trending and repricing allowed

At this point, our reweighted claim data still reflects calendar year 2017 allowed claim costs across a wide variety of states, issuers, and healthcare providers. In order to ensure a meaningful level of homogeneity in terms of unit costs (prior to application of issuer unit cost profiles) and a meaningful overall claim level for the purpose of our analysis, we next apply several adjustments to allowed claim costs. We standardize medical unit costs to nationwide Medicare fee-for-service (FFS) allowed charge levels, trend claims by service category to calendar year 2020, and finally adjust the overall level of medical unit costs (as a percentage of FFS Medicare) in order to balance total claim costs to a meaningful market average.

1. **Standardization of medical unit costs:** Using the Milliman GlobalRVUs and Medicare Repricer™ software, we repriced medical facility, professional, and ancillary allowed charges to 100% of the 2018 nationwide Medicare fee schedules. Facility claim costs were repriced to the Medicare Prospective Payment System (PPS) fee schedules, even for non-PPS provider types (e.g., critical access hospitals). PPS payments were calculated omitting additional provider-specific charges such as disproportionate share payments, indirect medical education, and outlier payments. Professional and ancillary claim costs were repriced using the professional Resource Based Relative Value Scale (or RBRVS) and other relevant fee schedules (e.g., laboratory, ambulance, durable medical equipment).

For maternity and newborn diagnosis-related groups (DRGs), we substituted relative DRG weights used by the TRICARE program for active duty military and their dependents, in place of the MS-DRG weights used by Medicare's Inpatient PPS (which are generally considered inappropriate for nondisabled working age populations). In cases where claims could not be repriced, whether due to unsupported procedure codes or coding quality limitations, we gap-filled with proxy Medicare-allowed amounts based on relative value units assigned by Milliman GlobalRVUs and Medicare Repricer (which comprehensively cover all claim costs) multiplied by the average ratio of nationwide Medicare-allowed amounts to RVUs for services that were able to be repriced.

Because the valuation of reinsurance benefits is highly sensitive to the frequency and distribution of high-cost claims, we adjusted our repricing approach for the highest-cost claimants in order to retain a more representative shape of high-cost individual ACA market claims and contractual outlier provisions. We did this by dividing allowed charges for all claimants with over \$50,000 in total annual claim costs by the average percentage-of-Medicare reimbursement ratio *for claimants with fewer than \$50,000 in total annual claim costs*, in place of repricing these claims to Medicare fee schedules (which would have inappropriately dampened or truncated commercial allowed charges for the highest-cost claims).

2. **Trend claims by service category to 2020:** We then trended the claim costs forward from a combination of 2017 utilization rates and 2017 CHSD/2018 nationwide Medicare unit cost levels to a 2020 utilization and unit cost basis. Figure 20 shows the trends used, which are based on a combination of secular trend guidelines from the 2019 Milliman Health Cost Guidelines and the observed 2017-to-2018 prescription drug total cost trend from the 2018 Express Scripts Drug Trend Report.⁶⁵
3. **Balance total claim costs to a meaningful market average:** Finally, we solved for medical reimbursement rates as a percentage of nationwide Medicare FFS allowed amounts (2018, trended to 2020) such that the average paid claim cost across the weighted Composite market composition scenario would composite to the average 2018 reported claim cost PMPM across all states included in the Composite scenario, trended forward to 2020 using the same composite trend applied to the CHSD data.

We calculated an average 2018 claim cost PMPM of \$432.50 across the 45 states that form the basis of the Composite scenario, based on a weighted average market-wide premium of \$604.55⁶⁶ and an average claims-to-premium ratio of 72%.⁶⁷ After applying two years' trend, we arrived at a final claim target for the Composite scenario of \$483.64 PMPM, which we achieved by adjusting medical unit cost levels.

⁶⁵ Express Scripts. 2018 Drug Trend Report. Retrieved November 8, 2019, from <https://www.express-scripts.com/corporate/drug-trend-report>.

⁶⁶ CMS, Summary Report on Permanent Risk Adjustment Transfers for the 2018 Benefit Year, op cit.

⁶⁷ Kaiser Family Foundation. Share of Premiums Paid out as Claims on the Individual Market. State Health Facts. Retrieved November 8, 2019, from <https://www.kff.org/other/state-indicator/share-of-premiums-paid-out-as-claims-on-the-individual-market/>.

Rather than solving for a different target claim cost and reimbursement level for each of the Medicaid Expansion and Non-Expansion scenarios, we instead held trend and unit cost assumptions constant with the Composite scenario, resulting in average claim costs of \$458.09 and \$509.02, respectively. This approach allows us to attribute the entire difference in claim cost by market composition scenario to the scenario-specific population/risk mix, rather than clouding comparisons with geographical differences in unit cost levels by state.

Figure 20 demonstrates the final unit cost and utilization adjustments, which apply equally to all three market composition scenarios:

FIGURE 20: ADJUSTMENTS TO MILLIMAN CONSOLIDATED COST GUIDELINES SOURCES DATABASE (CHSD) ALLOWED CLAIM COSTS APPLIES TO ALL THREE MARKET COMPOSITION SCENARIOS (COMPOSITE, MEDICAID EXPANSION, AND NON-EXPANSION)

TYPE OF SERVICE	UTILIZATION	UNIT COST
Inpatient/Outpatient Facility	Three years of 1% annualized trend, from 2017 to 2020	146% of 2018 Medicare IPPS/OPPS
Professional/Ancillary	Three years of 1.5% annualized trend, from 2017 to 2020	130% of 2018 Medicare RBRVS/Ancillary
Prescription Drugs	Three years of 6% annualized trend, from 2017 to 2020	

Adjudicating paid claims against standardized benefit designs

Each time we adjust allowed costs, we simultaneously readjudicate paid claims against a set of standardized benefit designs by plan type (metallic and CSR variation level, in Figure 21). This readjudication serves two purposes. First, it ensures that paid claim costs respond appropriately to our adjustments to allowed amounts, with respect to the leveraging of benefit design features such as the deductible and maximum out-of-pocket limit (MOOP). Secondly, standardization allows for clearer interpretation of differences in claim costs across different segments of the market, by controlling for the wide variation in benefit designs within the original CHSD contributor data.

For simplicity of definition, and both ease and accuracy of adjudication, we defined each standard benefit design as a combination of a deductible (either integrated or distinct for each of medical and prescription drug costs), coinsurance, and MOOP. We applied these cost-sharing parameters to all types of service other than ACA-defined preventive services (which must be provided at zero out-of-pocket cost to the member).

We established the deductible and MOOP parameters for each silver variation based on the “2018 Final Standardized Options – Set One” from the 2018 Notice of Benefit and Parameters.⁶⁸ For the other plan types, we chose the most frequently listed values for each of the deductible and MOOP from the 2019 Marketplace Public Use Files released by HHS.⁶⁹ We solved for the level of coinsurance that applies between the deductible and MOOP in order to produce an actuarial value under the 2020 Federal Actuarial Value Calculator⁷⁰ that falls near the center of the permitted range, after rounding the coinsurance parameter to the nearest 5%.

FIGURE 21: STANDARD BENEFIT DESIGNS BY PLAN TYPE

PLAN TYPE	PREVENTIVE	ALL OTHER SERVICE CATEGORIES				FEDERAL ACTUARIAL VALUE CALCULATOR AV
		DEDUCTIBLE		COINSURANCE	MOOP	
		MEDICAL	PHARMACY			
Platinum	No cost sharing	\$275 (Combined)		90%	\$4,800	89.9%
Gold	No cost sharing	\$750 (Combined)		80%	\$7,900	79.6%
Silver (94% CSR AV)	No cost sharing	\$250	\$0	95%	\$1,250	94.2%
Silver (87% CSR AV)	No cost sharing	\$700	\$0	85%	\$2,450	86.6%
Silver (73% CSR AV)	No cost sharing	\$3,000	\$200	80%	\$5,850	72.5%
Silver (Standard)	No cost sharing	\$3,500	\$500	85%	\$7,350	70.1%
Bronze	No cost sharing	\$7900 (Combined)		100%	\$7,900	59.9%

⁶⁸ CMS. Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2018. Retrieved November 8, 2019, from <https://www.cms.gov/CCIO/Programs-and-Initiatives/Health-Insurance-Marketplaces/General-Resources-Items/Patient-Protection-and-Affordable-Care-Act-HHS-Notice-of-Benefit-and-Payment-Parameters-for-2018.html>.

⁶⁹ CMS. Health Insurance Exchange Public Use Files (Exchange PUFs). Retrieved November 8, 2019, from <https://www.cms.gov/CCIO/Resources/Data-Resources/marketplace-puf.html>.

⁷⁰ CMS. 2020 AV Calculator. Retrieved November 8, 2019, from <https://www.cms.gov/CCIO/Resources/Regulations-and-Guidance/Downloads/2020-AV-Calculator.xlsm> (Excel download).

SIMULATING A BASELINE ACA MARKETPLACE

Once we have reweighted and adjusted the CHSD data to reflect the population/risk and gross claim cost characteristics of our three market composition scenarios, our next step is to subdivide the overall population into a series of distinct issuers, each charging ACA-compliant premium rates for the standard benefit designs based on the issuer's expected financial results. We systematically vary issuers' profiles in terms of market share, unit cost, and the average health status (morbidity) of their enrollee populations, while holding other characteristics constant. We then simulate federal risk adjustment transfers—including the impact of high-cost risk pooling for claims above \$1 million—and calculate financial results (i.e., net claims, risk adjustment, and loss ratios) for each issuer and the market as a whole.

Establishing issuer profiles

The various issuer profiles each vary across one or more of three dimensions:

- **Market share:** The proportion of enrollment in the marketplace enrolled with the issuer. To vary market share, we scale up or down the proportion of enrollees with the market that are allocated to the given issuer, holding all else constant.
- **Medical unit cost:** The unit cost level for the issuer's medical claim costs, relative to the (previously established) market average. To vary medical unit cost, we apply an issuer-specific uniform adjustment factor to claim costs across all types of service other than pharmacy, holding all else constant.⁷¹
- **Morbidity:** The relative health status of enrollees in the issuer's plans.

The process to assign enrollees to the various issuer morbidity profiles is more involved than the process to vary market share and unit cost. To do this, we first assign each enrollee in the market a "relative morbidity score" (RMS), based on some combination of risk scores, demographic factors, plan type, and/or prior-year claim costs.

We define each enrollees' RMS as that person's prior-year prospective risk score—or current year prospective risk score in the case of enrollees for whom prior-year experience is unavailable—divided by their allowable age rating factors. Prospective risk scores are estimated using the Milliman Advanced Risk Adjusters™ (MARA™) software with the "CxAdjuster zero-lag" model. We use prospective risk scores under the theory that the chronic conditions emphasized by prospective risk models are more likely to influence enrollee coverage purchasing behavior than the acute episodes emphasized by concurrent models. We use MARA risk scores rather than another model due both to their high predictive accuracy⁷² and the fact that MARA scores had already been assigned to the Milliman CHSD data. We divide by allowable age rating factors to control for a similar portion of variability in risk scores attributable to enrollee demographics as that controlled for by the federal risk transfer formula (which limits transfers to the portion of risk not explained by allowable age rating factors).

We also considered and tested the sensitivity to alternate methods of defining enrollees' RMS, including a scenario in which prospective risk scores are not divided by age rating factors, and another scenario in which multiple indicators other than risk scores are used, including plan type and prior-year claim costs. However, results were not materially different under the alternate scenarios.

Once we have assigned RMS values to the entire population, we then rank enrollees in order by RMS, and assign them to five "morbidity quintiles," each representing 20% of total member months, ranked from lowest to highest morbidity by ascending RMS.

⁷¹ We held pharmacy constant across issuer profiles, because in our experience unit costs for prescription drugs are less variable than medical unit costs across issuers and markets.

⁷² Society of Actuaries (October 2016). Accuracy of Claims-Based Risk Scoring Models. Retrieved November 8, 2019, from <https://www.soa.org/globalassets/assets/files/research/research-2016-accuracy-claims-based-risk-scoring-models.pdf>.

Finally, we use a set of weights that vary by morbidity quintile to adjust the proportion of enrollees by quintile assigned to each of our three issuer morbidity profiles. Issuers in the low morbidity profile receive greater weight on enrollees in the lower quintiles and reduced weight in the higher quintiles. The opposite case is true for issuers in the high morbidity profile. The weights are symmetrical such that a low morbidity and high morbidity issuer will combine to produce an average morbidity issuer (i.e., equal weights across all five quintiles). The weights that we selected (see Figure 22) were defined to ensure that all issuer profiles receive at least some enrollment weight on every quintile, and to result in risk transfer charges and payments for (average unit cost) issuers in the low and high morbidity profiles equal to approximately 30% of premium revenue.

FIGURE 22: RELATIVE ENROLLMENT WEIGHTS BY ISSUER MORBIDITY PROFILE AND MORBIDITY QUINTILE

ISSUER MORBIDITY PROFILE	RELATIVE WEIGHT BY MORBIDITY QUINTILE				
	LOW	LOW/MID	MID	MID/HIGH	HIGH
Low Morbidity	1.50	1.25	1.00	0.75	0.50
Average Morbidity	1.00	1.00	1.00	1.00	1.00
High Morbidity	0.50	0.75	1.00	1.25	1.50

Using these three dimensions, we then subdivide the entire market into two different sets of issuers (each of which sums up to 100% market share):

1. **Illustrative symmetrical set:** This set is composed of nine issuers—each with equal market share—that systematically vary across every combination of below-average, average, and above-average unit cost and morbidity. We use this set of issuers to model and illustrate differences in required premium levels, policy impacts, and volatility of financial results by type of issuer, while controlling for extraneous variables (such as differences in market share by issuer or asymmetry with respect to variation in unit cost versus the market average). However, the assumption of equal enrollment across all combinations of unit cost and morbidity is less useful in cases where a realistic spread is required between the lowest premiums in the market (e.g., the low-unit-cost/high-morbidity issuer profile) and market-wide average premium rates, which leads us to create a second, more representative set of issuers.
2. **Representative set:** This set is composed of fewer issuers than the illustrative symmetrical set (for example, there is no issuer with a low-unit-cost/high-morbidity profile), and is intended to produce a more realistic and representative degree of variation between premiums for the lowest-cost plans (including the benchmark silver plan) and the market average. We therefore use the representative set of issuers to inform conclusions regarding overall premium levels and policy funding costs, including the simulated impact of each policy on federal APTC premium subsidies and the minimum cost of coverage. We achieved this more representative spread by assuming a modest correlation between unit cost and morbidity (e.g., due to narrow versus broad provider network strategies). As a result, the average silver premium offered by the price leader of the representative set of issuers (our proxy for the benchmark silver premium) is 7% below the Composite market average, compared to 17% for the symmetrical set of issuers.

Please refer to Figure 12 in the “Results by issuer profile” subsection of the “Detailed results and discussion” section earlier in this report for additional detail regarding the definition and results for each of the two sets of issuer profiles.

Calculating issuer premium rates

Each issuer in our simulation offers coverage using the standard benefit designs discussed earlier, and charges ACA-compliant rates by plan that together aggregate to a required revenue level based on the issuer's expected financial results.

We calculate required revenue in total across each issuer's entire expected portfolio according to the following formula:

$$\frac{(Gross\ claims - Risk\ adjustment\ transfer\ portion) * (1 + Variable\ expense\ ratio) - Ceded\ claims + (Fixed\ expenses\ PMPM * Membership)}{1 - (State\ Taxes/Fees\ \%\ of\ Revenue + Federal\ Taxes/Fees\ \%\ of\ Revenue + Risk/Profit\ \%\ of\ Revenue)}$$

- **Gross claims:** This term represents paid claim costs prior to ceding a portion of claims under the active state waiver policy (i.e., traditional reinsurance or coinsurance) and/or federal high-cost risk pooling (HCRP).
- **Risk adjustment transfer portion:** This term represents the issuer's calculated net federal risk transfer payment or charge, prior to consideration of HCRP. These transfers net out to exactly \$0 in total across all issuers within a state's individual QHP marketplace.
- **Variable expense ratio:** This term represents expenses assumed to vary as a proportion of issuers' net benefit costs (claims net of risk adjustment). The expense ratio is applied to gross claim costs *prior* to the impact of reinsurance and HCRP, under the assumption that while reinsurance and HCRP transfer payments may reduce issuers' claim cost burden, they are unlikely to materially affect associated administrative expenses.
- **Ceded claims:** This term represents the value of claims ceded under the active state waiver policy (i.e., claims within the policy-specific corridor multiplied by the specified coinsurance rate), where applicable, plus claims ceded under the federal HCRP program (i.e., 60% of annual claim costs above \$1 million, based on the program parameters in effect at the time of publication).
- **Fixed expenses PMPM:** This term represents the fixed monthly cost per enrollee for non-benefit expenses that are assumed not to vary with the enrollee's benefit costs.
- **Membership:** This term equals the number of member months for the issuer, for use in converting PMPM expenses to an aggregate basis.
- **State taxes and fees percentage of revenue:** This term represents federal taxes and fees (e.g., premium tax, state-based exchange user fees) as a percentage of total revenue. As we will discuss in the section on simulation of funding costs below, we consider the impact of state policy waivers on state tax and fee revenue to be part of the funding cost to the state.
- **Federal taxes and fees percentage of revenue:** This term represents federal taxes and fees (e.g., exchange user fees in a federally facilitated marketplace, the ACA Health Insurance Providers Fee) as a percentage of total revenue. As we will discuss in the section on simulation of funding costs, the expected impact of state policy waivers on federal taxes and fees is offset against the value of federal pass-through funds under a 1332 waiver, and therefore flows directly into the state funding cost.
- **Risk/profit percentage of revenue:** This term represents issuers' target margins for risk and profit as a percentage of total revenue, prior to state and federal income tax.

In establishing values for these parameters, we assume a return to higher loss ratios after the historically low ratios reported for 2018 (for which benefit costs totaled approximately 70% of individual QHP premium revenue nationwide⁷³). For simplicity, we modeled all administrative expenses as variable costs (as a percentage of gross benefit cost *before* reinsurance or coinsurance). Since reinsurance does not eliminate the need for issuers to process claims and manage high cost cases, we did not assume any reduction in variable expenses when claims are ceded under reinsurance or coinsurance. We also sensitivity-tested under a scenario in which some administrative expenses are fixed on a PMPM basis (and therefore don't vary by issuer or plan) and arrived at similar results.

⁷³ Kaiser Family Foundation, Share of Premiums Paid out as Claims on the Individual Market, op cit.

State and federal taxes and fees represent 7% of revenue, which is comprised of an approximately 3% exchange user fee, 2% ACA Health Insurance Provider Fee, and 2% state premium tax. While we allocated the majority of taxes and fees to the federal side, the allocation between state and the federal government is not a critical assumption, as the simulated state funding cost is sensitive only to the total value of taxes and fees across both entities. Figure 23 shows the parameters that we used, which result in an expected loss ratio of 80% under our baseline scenario.⁷⁴

FIGURE 23: PARAMETER VALUES USED FOR THE CALCULATION OF ISSUERS' REQUIRED REVENUE

PARAMETER	VALUE
Variable Expense Ratio (% of claims net of risk adjustment, before waivers)	10%
Fixed Expenses PMPM	\$0.00
State Taxes/Fees % of Revenue	2%
Federal Taxes/Fees % of Revenue	5%
Risk/Profit % of Revenue (before income tax)	5%

For each issuer, we then develop a portfolio of ACA-compliant consumer-adjusted premium rates by plan that aggregate to the issuer's required revenue target under the expected scenario (i.e., before simulating volatility in enrollment and claim costs). For simplicity, we model only a single geographic rating area for the entire state, assume no variation in rates between tobacco users and nonusers, and model a single benefit design for each plan type (metallic level and CSR variation). We assume that consumer-adjusted premium rates for each issuer vary solely along the following four dimensions:

- **Consumer age:** Relative consumer-adjusted premium rates by age are assumed to vary according the standard federal table of allowable age rating factors.⁷⁵
- **Metallic level:** The ACA permits issuers to vary premium rates by benefit plan to account for differences in actuarial value and cost-sharing design of the plan, including the impact of benefit design differences on induced demand. Issuers are expected to rate each plan as if it were part of a single risk pool, and are therefore prohibited from considering the expected relative health status of enrollees in each plan when setting premium rates. Issuers are also prohibited from charging a different rate for enrollees in silver cost-sharing reduction (CSR) variation plans than for enrollees in the corresponding standard (approximately 70% actuarial value) silver plan. Because we only modeled a single benefit plan for each metallic level (with the exception of the silver CSR variations), variation in rates by benefit design is equivalent to variation by metallic level (i.e., bronze through platinum).
- **Cost-sharing reduction rate load (silver on-marketplace plans only):** Beginning in late 2017, HHS ceased paying issuers for the value of cost-sharing reduction benefits provided to certain low-income beneficiaries, leaving issuers on the hook to pay the full cost of these individuals' richer benefit plans. In response, many states began permitting issuers to incorporate a rate load for silver plans offered on-marketplace to account for the expected cost of unreimbursed CSR payments. This approach to rate setting was used throughout our simulations.
- **Base rate:** This is the "base" premium level that—when multiplied by each of the three other rating factors—produces consumer-adjusted premium rates for the given combination of benefit plan, consumer characteristics, issuer, and policy scenario.

We varied the base rates by issuer and policy scenario in order to target each issuer's required revenue under expected results. All other rating factors were held constant across issuers and policy scenarios.

⁷⁴ You can produce a crude approximation of the federal medical loss ratio (MLR) formula by subtracting out state and federal taxes and fees from the traditional loss ratio denominator, which results in an estimated federal MLR of approximately 86% under our baseline scenario. Note that this ignores provider incentives, quality improvement activities, and other important aspects of the federal MLR formula.

⁷⁵ CMS. State Specific Age Curve Variations. Retrieved November 8, 2019, from <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/Downloads/StateSpecAgeCrv053117.pdf>.

We based the slope of rating factors by metallic level on the assumed metallic actuarial value (AV) and induced demand factors (IDF) by metallic level established by HHS for operation of the federal risk transfer program.⁷⁶ When establishing the CSR rate load for silver on-marketplace plans, we initially replaced the standard silver metallic AV (70%) with the enrollment-weighted average metallic AV inclusive of both standard silver plans and CSR variations (e.g., exactly 87% for 87% CSR variations). During subsequent review, however, we found that the resulting benefit relativity for on-marketplace silver plans relative to bronze or gold plans was higher than the average relativity by metallic level for low-cost plans across the United States in both 2018 and 2019 (after CSR rate loading was first implemented).⁷⁷ In order to more closely emulate actual market price relationships, we dampened the assumed CSR rate load by a factor of 50%. Figure 24 shows the resulting slope of rating factors by plan type.

FIGURE 24: RELATIVE RATING FACTOR SLOPE BY PLAN TYPE AND MARKET COMPOSITION SCENARIO

PLAN TYPE	METALLIC ACTUARIAL VALUE	INDUCED DEMAND FACTOR	CSR RATE LOAD			RELATIVE PLAN RATING FACTOR		
			COMPO-SITE	MEDICAID EXPANSION	NON-EXPANSION	COMPO-SITE	MEDICAID EXPANSION	NON-EXPANSION
Platinum	90%	1.15		1.00			1.04	
Gold	80%	1.08		1.00			0.86	
Silver (on-marketplace)	70%	1.03	1.11	1.09	1.13	0.80	0.78	0.81
Silver (off-marketplace)	70%	1.03		1.00			0.72	
Bronze	60%	1.00		1.00			0.60	

Simulating risk adjustment and high-cost risk pooling

For each of our simulated markets, we also model payments and charges under the federal high-cost risk pooling (HCRP) adjustment and risk adjustment state payment transfer formula.

Beginning in 2018, HHS added the HCRP program to the existing federal risk adjustment program, with the intent of more effectively spreading risk from issuers who cover the highest-risk/highest-cost claimants—for whom risk scores tend to underestimate relative risk—across ACA markets nationwide. The HCRP program can essentially be thought of as a reinsurance program, for which 60% of annual claim costs above a \$1 million attachment point are ceded,⁷⁸ and for which a corresponding pooling charge is assessed across all issuers as a percentage of revenue (0.2% of revenue for benefit year 2018, the first year in which the HCRP program operated). Unlike the existing “transfer formula” portion of the program, which transfers only between issuers within a state marketplace and does not transfer across state lines, the pooling charge for claims ceded under HCRP is assessed based on the nationwide ratio of ceded claims to revenue.

We calculated 60% of all annual claim costs above \$1 million as ceded to the HCRP program. All reported net claim costs are expressed after application of both HCRP reinsurance payments and any active state waiver policies (e.g., traditional reinsurance, uniform coinsurance). In contrast, we do not explicitly model the HCRP assessment as a percentage of premium, and instead consider its impact to be encompassed within the “federal taxes and fees” term of the required revenue formula.

⁷⁶ CMS, Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2018, op cit.

⁷⁷ Kaiser Family Foundation, Average Marketplace Premiums by Metal Tier, 2018-2020, op cit.

⁷⁸ These parameters have been in effect since the 2018 benefit year. In the 2020 Notice of Benefit and Payment parameters, HHS expressed its intent to retain these parameters as the default going forward, unless explicitly changed through the federal rule-making process.

In contrast to the recent introduction of the HCRP program, the federal risk adjustment state payment transfer formula was established prior to the first marketplaces going live in 2014 and, except for modest refinements over time,⁷⁹ it has remained essentially stable. For precise details of the current ACA transfer formula, we refer readers to the 2020 Notice of Benefit and Payment Parameters.⁸⁰ For the purpose of our analysis, PremiumASSIST approximates each issuer's net payment or charge using the following modified variation of the federal formula:

$$Net\ transfer_i = \left[\frac{\sum_j MM_{i,j} \times PLRS_{i,j} \times IDF_{i,j}}{\sum_k (\sum_j MM_{k,j} \times PLRS_{k,j} \times IDF_{k,j})} - \frac{\sum_j MM_{i,j} \times AV_{i,j} \times ARF_{i,j} \times IDF_{i,j}}{\sum_k (\sum_j MM_{k,j} \times AV_{k,j} \times ARF_{k,j} \times IDF_{k,j})} \right] \times \bar{P}$$

Where:

- **Net Transfer_i** = Net risk adjustment state transfer payment/(charge) for issuer i
- **MM_{i,j}** = Member months of enrollment for member j enrolled with issuer i
- **PLRS_{i,j}** = Plan liability risk score for member j enrolled with issuer i (calculated using the 2018 HHS-HCC risk model, including consideration of enrollment duration factors and induced demand adjustments for CSR plan variations, where applicable)
- **IDF_{i,j}** = Induced demand factor for member j enrolled with issuer i⁸¹
- **AV_{i,j}** = Metallic level AV factor for the plan type of member j enrolled with issuer i⁸²
- **P̄** = Market-wide average premium, net of the 14% administrative cost-carve out defined by HHS

The numerator is summed across all enrollees (j) for the specified issuer (i), while the denominator is summed across all enrollees (j) for all issuers (k) in the state individual QHP market. Key simplifications of this formula versus the actual federal risk adjustment state transfer formula include omission of the distinction between billable and non-billable member months and omission of geographic cost factors. In our experience, the former consideration (billable member months) does not typically have a material impact on issuers' risk transfers, except in cases where one issuer has a disproportionate share of family enrollment. The latter consideration (geographic cost factors) is moot for our simulation, because we are treating the entire state market as a single geographic rating area.

To avoid circular logic in the calculation of the market-wide premium (due to the dependence of each issuer's premium rates on their expected risk transfers, and the dependence of expected risk transfers on issuer's premium rates in the form of the market-wide premium), we rely on the fact that risk adjustment state transfer payments and charges must sum to \$0 across all issuers within a state QHP market. We are therefore able to calculate the required market-wide average premium level using the required revenue formula from the prior section, setting the net value of risk transfer payments and charges to \$0.

⁷⁹ For example, the 14% administrative cost carve-out adjustment to the market-wide average premium was first introduced for the 2018 benefit year, the option for states to apply a state-flexibility scalar to transfer payments was first introduced for the 2019 benefit year, and the HHS-HCC risk model has undergone some form of refinement, expansion, or recalibration every year that the federal risk transfer program has been in effect.

⁸⁰ Federal Register (April 25, 2019). Final rule: Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2020. Retrieved November 8, 2019, from <https://www.federalregister.gov/documents/2019/04/25/2019-08017/patient-protection-and-affordable-care-act-hhs-notice-of-benefit-and-payment-parameters-for-2020>.

⁸¹ Ibid.

⁸² Ibid.

SIMULATING STATE PREMIUM REDUCTION POLICIES

With our market simulation in place for the baseline scenario, we are now able to apply our state premium reduction policies and measure the impact on premium rates in the market.

The specific approach used varies between the claim-based approaches (traditional reinsurance and uniform coinsurance), for which policy funds are passed on to issuers and lead to a series of interrelated changes to the premium rates charged by each issuer and risk transfers within the market, and wraparound PMPM subsidies, which are passed on to members directly at the point of sale, bypassing issuers and the risk adjustment program entirely:

- **Traditional reinsurance and uniform coinsurance:** For the two claim-based policies, we start by calculating the value of ceded claims for each issuer based on the parameters of the active policy scenario. We then recalculate required revenue for the entire market, scale each issuer's net risk adjustment transfer to reflect the revised market-wide premium, and recalculate required revenue and ACA-compliant premium rates for each issuer and plan.
- **Wraparound PMPM subsidies:** When modeling wraparound subsidies that apply at the point of sale, it is important to distinguish between issuer premiums—which represent the total premium revenue received by each issuer and are used to calculate the market-wide average premium for the risk transfer formula—and member premiums, which are calculated net of all federal and state premium subsidies. In contrast to the claim-based policies' effect on issuer premiums, point of sale wraparound subsidies only affect member premiums, leaving issuer revenue unchanged from the baseline scenario.

For consumers eligible for federal premium subsidies, we assume no change in their premium responsibility. For all other consumers, we start with the policy-defined subsidy value at age 40, and use federal allowable age rating factors to adjust it to the enrollment-weighted average age factor for the beneficiary or group thereof.

SIMULATING STATE AND FEDERAL FUNDING COSTS

Having simulated our marketplaces under both baseline conditions and each of our policy scenarios, we are now able to estimate the impact of each policy of federal premium subsidies, federal pass-through payments (in the case of claim-based policies employing 1332 waivers), and the net policy funding cost to the state. Below we describe our methodology for each subcomponent of state and federal funding, followed by Figure 25, which illustrates these calculations for all three policy types under the Composite scenario.

APTCs

We calculate the value of federal Advanced Premium Tax Credits (APTCs) in two ways, first for the baseline scenario based on assumptions regarding the proportion of enrollees eligible for subsidies and the average premium responsibility of these enrollees, and secondly for each alternate policy scenario based on the estimated impact to the second-lowest-cost (benchmark) silver plan's premium:

- **Baseline scenario:** For the baseline scenario (prior to application of state premium reduction policies) under each of our market composition scenarios (i.e., Composite, Medicaid Expansion, and Non-Expansion), we start by using benefit year 2018 public use files and enrollment reports published by HHS to calculate two figures: the weighted average proportion of market enrollees eligible for APTCs over the entire risk pool (on and off-marketplace combined), and the weighted average premium responsibility of these enrollees.

We produce our final estimate of the premium responsibility for subsidized enrollees by trending forward the weighted average 2018 responsibility by 6%, to account for changes from 2018 to 2020 in the federal poverty level and the "applicable percentage" of income for which subsidized enrollees are responsible. Using the simplifying assumption that the average benefit plan purchased by subsidized consumers is comparable to that reflected in the market-wide average premium, we are then able to solve for the implied baseline value of APTCs PMPM using the following formula:

$$\begin{aligned}
 & \text{Baseline APTCs PMPM} \\
 &= \% \text{ of enrollees eligible for APTCs} \\
 & \times (\text{Baseline market-wide average issuer premium PMPM} \\
 & - \text{Trended average premium responsibility for APTC-eligible enrollees})
 \end{aligned}$$

- **Alternate policy scenarios:** For each premium reduction policy scenario, we start with APTCs from the baseline scenario, and model the assumed reduction in APTCs (if any) attributable to the simulated change in the issuer premium rate for the benchmark silver plan.

To do this, we first specify which plan in our simulation represents the benchmark silver plan. Under the ACA, the benchmark silver plan varies by county and is defined as the second-lowest-cost silver plan offered on-marketplace in that county. In some cases, this plan may be the lowest-cost silver plan offered by the second-lowest-cost issuer, while in other cases, this plan may be the second-lowest-cost silver plan offered by the lowest-cost issuer. Although we only model a single premium rate for each issuer's on-marketplace silver plan, we prefer to interpret the simulated silver premium as the average rate charged by each issuer across a small portfolio of silver plans. For this reason, we approximate the benchmark silver premium using the (average on-marketplace) silver premium rate charged by the lowest-cost issuer in our representative market, rather than the rate charged by the second-lowest-cost issuer.

Because APTCs are modeled as a defined benefit subsidy indexed to the benchmark silver plan, the value of subsidies to which APTC-eligible enrollees are entitled varies with the cost of that plan. To this end, changes in the benchmark silver premium for the APTC-eligible population translate into changes in APTCs themselves, with two key exceptions: First, in cases where a consumer's defined premium responsibility (as a percentage of income) exceeds the cost of the benchmark silver plan, the consumer is not entitled to any APTCs, such that further reductions in the cost of the benchmark silver plan will not translate into any change in that consumer's nonexistent subsidies. Second, there may be cases where a highly subsidized consumer elects to purchase a plan (other than the benchmark silver plan) that is cheaper than the value of the subsidies to which the consumer is entitled, such that the APTC funding cost for that consumer will vary with changes to the plan selected by the consumer rather than the benchmark silver plan. For these reasons, we estimate that reductions to the benchmark silver premium will typically result in slightly less than a dollar-for-dollar reduction (on average) in APTCs for subsidy-eligible consumers. To account for this, we applied a 95% "benchmark-to-APTC-change impact translation factor" when translating changes in the benchmark silver plan to changes in APTCs for subsidy-eligible consumers.

With these considerations in mind, and under the simplifying assumption that the average age of enrollees receiving APTCs is comparable to that for enrollees in silver plans offered on-marketplace, we use the following formula to model APTCs for each alternate policy scenario:

$$\begin{aligned}
 & \textit{Adjusted APTCs} \\
 & = \textit{Baseline APTCs} \\
 & - \Delta \textit{ in benchmark silver premium (adjusted to the average age of enrollees in on} \\
 & - \textit{ " marketplace silver plans) } \times \% \textit{ of enrollees eligible for APTCs } \times 0.95 \textit{ benchmark" } - \textit{ " to} \\
 & - \textit{ " APTC dampening factor}
 \end{aligned}$$

Federal pass-through funding

For policies employing 1332 waivers (e.g., traditional reinsurance and uniform coinsurance), we modeled the value of federal pass-through funding as the policy-specific reduction in federal APTC premium subsidies, net of offsets based on the expected reduction in federal tax and fee revenue. We calculated the value of lost federal taxes and fees by multiplying the simulated change in the market-wide average issuer premium by the "Federal Taxes/Fees % of Revenue" term from our required retention formula (i.e., 5%).

$$\begin{aligned}
 & \textit{Federal pass-through funding PMPM} \\
 & = \Delta \textit{ in APTCs PMPM} \\
 & - (\Delta \textit{ in Market-wide average Premium PMPM } \times \textit{ Federal Taxes/Fees \% of Revenue})
 \end{aligned}$$

Net state funding cost

We calculated the net state funding cost PMPM as the total reduction in claims, plus the value of wraparound premium subsidies across the entire enrollee population, minus federal pass-through funds, plus the value of lost state tax and fee revenue. To calculate the value of wraparound subsidies for the entire population, we age-adjusted the subsidy to the market average age to calculate what the value would be if the entire population received the subsidies, and we then subtracted out the portion of that value associated with enrollees that already receive federal APTC premium subsidies (using the average age of silver on-marketplace enrollees as a proxy for the age of enrollees receiving federal subsidies). To calculate the value of lost state tax and fee revenue, we multiplied the

simulated change in the market-wide average issuer premium by the “State Taxes/Fees % of Revenue” term from our required retention formula (that is, 2% of premium).

$$\begin{aligned}
 & \text{State funding cost PMPM} \\
 &= \text{Ceded claims PMPM under state policy} \\
 &+ \left(\begin{aligned} & \text{Wrap-around subsidy PMPM (adjusted to the average age of the entire risk pool)} \\ & - [\% \text{ of enrollees eligible for APTCs} \times \\ & \text{Wrap-around subsidy PMPM (adjusted to the average age of silver on-marketplace enrollees)}] \end{aligned} \right) \\
 &- \text{Federal pass-through funding PMPM} \\
 &+ (\Delta \text{ in Market-wide average Premium PMPM} \times \text{State Taxes/Fees \% of Revenue})
 \end{aligned}$$

Funding calculation demonstration

FIGURE 25: DEMONSTRATION OF FUNDING CALCULATIONS BY POLICY TYPE
COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)

LINE ITEM	TRADITIONAL REINSURANCE	UNIFORM COINSURANCE	WRAPAROUND PMPM SUBSIDY	CALCULATION
Starting APTCs				
(a) % of Population Eligible for APTCs		72%		From Composite scenario*
(b) Baseline Market-wide Avg. Issuer Premium PMPM		\$604		From Composite scenario*
(c) Trended Avg. Premium Responsibility for APTC Recipients		\$108		From Composite scenario*
(d) Baseline APTCs		\$357		= (a) x [(b) - (c)]
Adjusted APTCs				
(e) Reduction in Benchmark Silver Issuer Premium PMPM (age 40)	\$42	\$62	\$0	From Composite scenario*
(f) Average Age Factor for Silver On-Marketplace Enrollees		1.735		From Composite scenario*
(g) Age 40 Age Rating Factor		1.278		From Composite scenario*
(h) Reduction in Benchmark Silver Issuer Premium PMPM (adjusted to average age of APTC recipients)	\$57	\$84	\$0	= (e) x [(f) ÷ (g)]
(i) Benchmark-to-APTC-Change Impact Translation Factor		95%		From Composite scenario*
(j) Adjusted APTCs	\$318	\$299	\$357	= (d) - (a) x (h) x (i)
Federal Pass-through Payments				
(k) Reduction in Federal APTCs	\$39	\$58	\$0	= d - j
(l) Reduction in Federal Tax and Fee Revenue (5% of premium)	\$3	\$4	\$0	From Composite scenario*
(m) Federal Pass-through Payments (net of offsets)	\$36	\$53	\$0	= (k) - (l)
Net State Funding Cost				
(n) Ceded Claims Under State Policy	\$55	\$72	\$0	From Composite scenario*
(o) Wraparound Subsidy PMPM (adjusted to average age of entire pool)	\$0	\$0	\$76	From Composite scenario*
(p) Wraparound Subsidy PMPM (adjusted to average age of APTC recipients)	\$0	\$0	\$78	From Composite scenario*
(q) Wraparound Subsidy PMPM (average across the entire pool, after limiting to enrollees ineligible for APTCs)	\$0	\$0	\$20	= (o) - [(p) x (a)]
(r) Reduction in State Tax and Fee Revenue (2% of premium)	\$1	\$1	\$0	From Composite scenario*
(s) Required State Funding PMPM	\$20	\$20	\$20	= (n) + [(o) - (a) x (p)] - (m) + (r)

Note: Values are rounded. All values not calculated on this table come from the Composite market simulation scenario.

MODELING VOLATILITY USING MONTE CARLO SIMULATION

All of the model calculations discussed thus far are deterministic. Each issuer's expected enrollee population and claim experience is calculated by applying relative weights for the chosen market-composition scenario and issuer morbidity profile to the entire pool of adjusted individual QHP data. Each issuer's premium rates are set to balance to required revenue under this expected scenario.

In practice, however, issuers are subject to random volatility with respect to their enrollee populations and claim experience, and even issuers that set premium rates appropriately can expect their financial results to vary from expectations. This random volatility risk (along with mispricing risk and the cost of capital) is one of the primary reasons that issuers must include profit/risk margins when setting rates.

In order to model random volatility risk and make statements about the impact of each state premium reduction policy on the level of risk in marketplaces, PremiumASSIST uses a Monte Carlo approach to run 1,000 separate simulations of each market composition scenario and measure the volatility of net claim costs and issuer loss ratios by issuer and in aggregate across the entire market for both the baseline scenario and after application of each state premium reduction policy.

For each simulation, we set total risk pool enrollment (both on and off-marketplace) to 153,000 average monthly enrollees (1,836,000 member months), based on the median reported total risk pool enrollment by state in 2018.⁸³ We use biased random sampling (with replacement) to populate each issuer's enrollee population from the overall pool of adjusted QHP data. We weight the sampling distribution based on the relative weights by enrollee from the chosen market composition scenario, multiplied by the relative weights by morbidity quintile for each issuer's morbidity profile. We continue assigning unique enrollees to each issuer until they reach or surpass their specified market shares.

Rather than assuming perfect foreknowledge of enrollment and claims, we instead assume that issuers set their premium rates in advance based on expected financial results, locking them into the consumer-adjusted premium rates from the deterministic scenario. We model risk adjustment transfers within each simulation based on the market-wide average consumer-adjusted issuer premium and the distribution of risk scores for the simulated market risk pool. The random volatility in each Monte Carlo simulation then manifests as a difference between issuer's actual financial results (net of risk adjustment) and their required revenue.

To measure volatility, we look at the coefficient of variation (i.e., standard deviation divided by the mean) for each of net claims (after high-cost risk pooling and any state reinsurance or coinsurance policies) and traditional loss ratios (i.e., claims net of risk adjustment, divided by total issuer revenue). We look at these results both at the individual issuer level and for the market as a whole.

This simulation approach produces a meaningful measure of the *relative* differences in volatility by issuer type and policy scenario. However, the specific value of the volatility metrics (e.g., coefficients of variation) is sensitive to the assumptions of each scenario and the PremiumASSIST model. In particular, the absolute level of volatility is highly sensitive to the size of the risk pool and each issuer's market share (decreasing with enrollment), while the relative volatility among issuers and the relative impact of each policy (as a percentage of absolute PMPM volatility) is less so. Additionally, the absolute level of volatility in our simulations (in which enrollees are randomly sampled from a larger pool and assigned to issuers) may differ from actual markets, in which a substantial fraction of enrollees may reenroll in the same issuer from one year to the next (reducing volatility risk), and in which there may be additional uncertainty around trends in cost levels and the profile of the overall risk pool (increasing risk). For these reasons, we generally limit reported results to relative volatility levels and refrain from reporting absolute levels of each volatility metric.

⁸³ CMS, Summary Report on Permanent Risk Adjustment Transfers for the 2018 Benefit Year, op cit.

MODEL VALIDATION

To ensure that we can rely on the results of our analysis as meaningful, we validated PremiumASSIST in several ways. First, we sensitivity tested the impact of varying model inputs and assumptions along different dimensions, in order to verify that the impacts were reasonable, consistent with theory and market experience, and that results were not overly sensitive to assumptions informed by judgment. We discuss several key results and observations from this sensitivity testing in the “Sensitivity of results to key assumptions and market characteristics” subsection of the “Detailed results and discussion” section, earlier in this report.

Additionally, we validated the model’s simulation of ceded claims and premium impacts under reinsurance by comparing model output to publicly reported results and estimates for prior and currently active reinsurance programs for individual QHP markets.

When modeling the federal HCRP program (which pools a portion of annual claims above \$1 million), we calculated ceded claims (for the Composite market composition scenario) equal to 0.19% of premium, which is reasonably in line with reported results for the program’s first year of operation (0.20% of premium in benefit year 2018).⁸⁴ We also used PremiumASSIST to model the attachment points and coinsurance parameters of the federal transitional reinsurance program (in 2015 and 2016) and 10 different states’ 1332 reinsurance waiver policies (under simplified assumptions), and found that the median and mean differences between the model simulations and the reported (actual or expected) premium impacts fell within one and two percentage points, respectively.

⁸⁴ CMS. BY18-AppendixA. Retrieved November 8, 2019, op cit.

Limitations and qualifications statement

This report is subject to the terms and conditions of the Consulting Services Agreement between Centene Corporation and Milliman dated January 13, 2003. The information contained in this report has been prepared for Centene in support of its communications with state policy makers and other healthcare industry stakeholders. The material is intended to illustrate considerations and describe expected directional results that may arise if a state establishes a program to reduce ACA marketplace premium rates through the targeted injection of state and/or federal 1332 waiver pass-through funds. The data and information presented may not be appropriate for any other purpose.

It is our understanding that the information contained in this report will be released publicly. Any distribution of the information should be in its entirety. Any user of the data must possess a certain level of expertise in actuarial science and healthcare modeling so as not to misinterpret the information presented.

Milliman makes no representations or warranties regarding the contents of this report to third parties. Likewise, third parties are instructed that they are to place no reliance upon this report prepared for Centene Corporation by Milliman that would result in the creation of any duty or liability under any theory of law by Milliman or its employees to third parties. Other parties receiving this report must rely upon their own experts in drawing conclusions about premium rates, funding costs, trend rates, and other assumptions.

The policies considered in this report do not represent an exhaustive list of ways states can promote the affordability of ACA marketplace coverage. Through this report, Milliman is neither advocating for nor against any particular policy position, nor is Milliman recommending that a state policy maker or other stakeholder take a specific action. The considerations, guidance, and results within are intended for educational purposes, and represent best estimates based on the specified assumptions; actual results will vary. Emerging experience should be monitored and adjustments made as necessary.

This report was authored by Jeff Milton-Hall and Fritz Busch and peer reviewed by Scott Jones and Doug Norris. Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. The authors and reviewers are members of the American Academy of Actuaries, and meet the qualification standards for performing the analyses described in this report.

Appendix A: Additional Model Results

FIGURE 26: MARKET IMPACTS FOR ALTERNATE POLICY PARAMETERS (\$20 PMPM STATE FUNDING COST)**COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)**

Numerical results are intended to illustrate differences by policy type and selected parameters, and are not intended as predictions for any state(s)

Variations on 1332 Reinsurance Waiver

MEASURES	TRADITIONAL REINSURANCE				LOW ATTACHMENT POINT (\$8.2K-\$1MM)		UNIFORM COINSURANCE				
	BASE No additional waiver funding	ORIGINAL REPORT PARAMETERS 58.6% coinsurance on annual claims between \$75,000 and \$500,000	\$50K-\$250K 46.6% coinsurance on annual claims between \$50,000 and \$250,000			18.9% coinsurance on annual claims between \$8,200 and \$1,000,000		ORIGINAL REPORT PARAMETERS 14.9% coinsurance on all claims up to \$1 million		NO CAP 14.8% coinsurance on all claims (no cap)	
	VALUE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE
Market Population Characteristics											
(a) Enrollment (average monthly lives)						153,000					
(b) % of Population Eligible for APTCs						72%					
(c) Avg. Age Rating Factor						1.695					
(d) Avg. Plan Liability Risk Score						1.570					
Premium Impacts											
(e) Avg. Issuer Premium PMPM (before all subsidies)	\$604	\$541	-10%	\$539	-11%	\$533	-12%	\$522	-14%	\$523	-13%
(f) Avg. Member Premium PMPM (net of all subsidies)	\$247	\$224	-9%	\$224	-9%	\$223	-10%	\$223	-10%	\$223	-10%
(g) Avg. Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$492	\$441	-10%	\$439	-11%	\$435	-12%	\$426	-14%	\$426	-13%
(h) Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$457	\$415	-9%	\$413	-10%	\$406	-11%	\$395	-14%	\$396	-13%
(i) Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$412	\$374	-9%	\$371	-10%	\$366	-11%	\$356	-14%	\$356	-13%
(j) Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$343	\$311	-9%	\$309	-10%	\$305	-11%	\$296	-14%	\$297	-13%
(k) Avg. Issuer Loss Ratio (claims net of risk adj.)	80%	79%		79%		79%		79%		79%	
(l) % Change in Volatility of Avg. Issuer Loss Ratio	n/a	-11%		-4%		-3%		+1%		-0%	
Claims Impacts											
(m) Gross Claims PMPM (before waivers and HCRP)						\$483					
(n) Net Claims PMPM (net of waivers and HCRP)	\$483	\$428	-11%	\$426	-12%	\$421	-13%	\$411	-15%	\$412	-15%
(o) % Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-28%		-21%		-18%		-15%		-15%	
(p) % Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-19%		-10%		-5%		+0%		-0%	
Implementation and Funding											
(q) Key Implementation Requirements	n/a					1332 waiver					
(r) Total Funding Cost PMPM	\$0	\$55		\$57		\$62		\$72		\$71	
(s) APTCs PMPM	\$357	\$318	-11%	\$315	-12%	\$310	-13%	\$299	-16%	\$300	-16%
(t) Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$36		\$38		\$44		\$53		\$53	
(u) State Funding Cost PMPM	\$0					\$20.00					
(v) Federal Responsibility %	n/a	64%		66%		69%		73%		73%	
(w) Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.16		1.17		1.18		1.21		1.20	

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

FIGURE 27: POLICY OPTION MARKET IMPACTS, ALTERNATE FUNDING LEVEL (\$10 PMPM STATE FUNDING COST)

COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

MEASURES	BASE No additional waiver funding	Variations on 1332 Reinsurance Waivers		UNIFORM COINSURANCE 7.5% coinsurance on all claims up to \$1 million	WRAPAROUND PMPM SUBSIDY \$29 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)
		TRADITIONAL REINSURANCE 29.3% coinsurance on annual claims between \$75,000 and \$500,000	%Δ FROM BASE		
Market Population Characteristics					
		VALUE			
(a) Enrollment (average monthly lives)		153,000			
(b) % of Population Eligible for APTCs		72%			
(c) Avg. Age Rating Factor		1.695			
(d) Avg. Plan Liability Risk Score		1.570			
Premium Impacts					
	VALUE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE
(e) Avg. Issuer Premium PMPM (before all subsidies)	\$604	\$573	-5%	\$563	-7%
(f) Avg. Member Premium PMPM (net of all subsidies)	\$247	\$235	-5%	\$235	-5%
(g) Avg. Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$492	\$467	-5%	\$459	-7%
(h) Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$457	\$436	-5%	\$426	-7%
(i) Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$412	\$393	-5%	\$384	-7%
(j) Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$343	\$327	-5%	\$319	-7%
				\$314	-8%
(k) Avg. Issuer Loss Ratio (claims net of risk adj.)	80%	80%		79%	80%
(l) % Change in Volatility of Avg. Issuer Loss Ratio	n/a	-7%		+1%	0%
Claims Impacts					
(m) Gross Claims PMPM (before waivers and HCRP)		\$483			
(n) Net Claims PMPM (net of waivers and HCRP)	\$483	\$456	-6%	\$447	-7%
(o) % Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-15%		-7%	0%
(p) % Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-10%		+0%	0%
Implementation and Funding					
(q) Key Implementation Requirements	n/a	1332 waiver			State-Based Exchange
(r) Total Funding Cost PMPM	\$0	\$27		\$36	\$10
(s) APTCs PMPM	\$357	\$337	-5%	\$328	-8%
(t) Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$18		\$27	\$0
(u) State Funding Cost PMPM	\$0	\$10.00			
(v) Federal Responsibility %	n/a	64%		73%	0%
(w) Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.16		1.21	1.00

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

FIGURE 28: POLICY OPTION MARKET IMPACTS, ALTERNATE FUNDING LEVEL (\$30 PMPM STATE FUNDING COST)**COMPOSITE SCENARIO (MEDICAID EXPANSION AND NON-EXPANSION COMBINED)**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

MEASURES	Variations on 1332 Reinsurance Waiver						
	BASE No additional waiver funding	TRADITIONAL REINSURANCE 87.8% coinsurance on annual claims between \$75,000 and \$500,000	UNIFORM COINSURANCE 22.4% coinsurance on all claims up to \$1 million		WRAPAROUND PMPM SUBSIDY \$86 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)		
Market Population Characteristics							
	VALUE						
(a) Enrollment (average monthly lives)	153,000						
(b) % of Population Eligible for APTCs	72%						
(c) Avg. Age Rating Factor	1.695						
(d) Avg. Plan Liability Risk Score	1.570						
Premium Impacts							
	VALUE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE
(e) Avg. Issuer Premium PMPM (before all subsidies)	\$604	\$510	-16%	\$481	-20%	\$604	0%
(f) Avg. Member Premium PMPM (net of all subsidies)	\$247	\$212	-14%	\$211	-15%	\$217	-12%
(g) Avg. Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$492	\$416	-16%	\$392	-20%	\$406	-17%
(h) Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$457	\$394	-14%	\$364	-20%	\$371	-19%
(i) Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$412	\$355	-14%	\$328	-20%	\$326	-21%
(j) Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$343	\$295	-14%	\$273	-20%	\$257	-25%
(k) Avg. Issuer Loss Ratio (claims net of risk adj.)	80%	79%		78%		80%	
(l) % Change in Volatility of Avg. Issuer Loss Ratio	n/a	-12%		+2%		0%	
Claims Impacts							
(m) Gross Claims PMPM (before waivers and HCRP)	\$483						
(n) Net Claims PMPM (net of waivers and HCRP)	\$483	\$401	-17%	\$375	-22%	\$483	0%
(o) % Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-40%		-22%		0%	
(p) % Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-27%		+1%		0%	
Implementation and Funding							
(q) Key Implementation Requirements	n/a	1332 waiver			State-Based Exchange		
(r) Total Funding Cost PMPM	\$0	\$82		\$108		\$30	
(s) APTCs PMPM	\$357	\$298	-16%	\$271	-24%	\$357	0%
(t) Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$54		\$80		\$0	
(u) State Funding Cost PMPM	\$0	\$30.00					
(v) Federal Responsibility %	n/a	64%		73%		0%	
(w) Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.16		1.21		1.00	

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

FIGURE 29: POLICY OPTION MARKET IMPACTS (\$20 PMPM STATE FUNDING COST)**MEDICAID EXPANSION SCENARIO**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

	BASE No additional waiver funding	Variations on 1332 Reinsurance Waiver						
		TRADITIONAL REINSURANCE 55.3% coinsurance on annual claims between \$75,000 and \$500,000	UNIFORM COINSURANCE 13.5% coinsurance on all claims up to \$1 million		WRAPAROUND PMPM SUBSIDY \$49 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)			
MEASURES		VALUE						
Market Population Characteristics								
(a)	Enrollment (average monthly lives)	153,000						
(b)	% of Population Eligible for APTCs	68%						
(c)	Avg. Age Rating Factor	1.717						
(d)	Avg. Plan Liability Risk Score	1.473						
Premium Impacts		VALUE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE
(e)	Avg. Issuer Premium PMPM (before all subsidies)	\$549	\$494	-10%	\$481	-12%	\$549	0%
(f)	Avg. Member Premium PMPM (net of all subsidies)	\$270	\$247	-8%	\$246	-9%	\$250	-7%
(g)	Avg. Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$437	\$393	-10%	\$383	-12%	\$388	-11%
(h)	Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$402	\$366	-9%	\$353	-12%	\$353	-12%
(i)	Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$370	\$337	-9%	\$325	-12%	\$321	-13%
(j)	Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$308	\$280	-9%	\$270	-12%	\$259	-16%
(k)	Avg. Issuer Loss Ratio (claims net of risk adj.)	80%	79%		79%		80%	
(l)	% Change in Volatility of Avg. Issuer Loss Ratio	n/a	-13%		+1%		0%	
Claims Impacts								
(m)	Gross Claims PMPM (before waivers and HCRP)	\$439						
(n)	Net Claims PMPM (net of waivers and HCRP)	\$439	\$391	-11%	\$380	-14%	\$439	0%
(o)	% Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-27%		-13%		0%	
(p)	% Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-18%		+0%		0%	
Implementation and Funding								
(q)	Key Implementation Requirements	n/a	1332 waiver			State-Based Exchange		
(r)	Total Funding Cost PMPM	\$0	\$48		\$59		\$20	
(s)	APTCs PMPM	\$279	\$247	-12%	\$235	-16%	\$279	0%
(t)	Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$29		\$41		\$0	
(u)	State Funding Cost PMPM	\$0	\$20.00					
(v)	Federal Responsibility %	n/a	60%		67%		0%	
(w)	Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.14		1.18		1.00	

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

FIGURE 30: POLICY OPTION MARKET IMPACTS (\$20 PMPM STATE FUNDING COST)**NON-EXPANSION SCENARIO**

Numerical results are intended to illustrate differences by policy type, and are not intended as predictions for any state(s)

	BASE No additional waiver funding	Variations on 1332 Reinsurance Waiver		UNIFORM COINSURANCE 17.5% coinsurance on all claims up to \$1 million	WRAPAROUND PMPM SUBSIDY \$70 PMPM age 40 age-adjusted premium subsidy (members above 400% FPL)
		TRADITIONAL REINSURANCE 62.3% coinsurance on annual claims between \$75,000 and \$500,000	%Δ FROM BASE		
MEASURES					
Market Population Characteristics					
		VALUE			
(a) Enrollment (average monthly lives)		153,000			
(b) % of Population Eligible for APTCs		76%			
(c) Avg. Age Rating Factor		1.665			
(d) Avg. Plan Liability Risk Score		1.665			
Premium Impacts					
	VALUE	VALUE	%Δ FROM BASE	VALUE	%Δ FROM BASE
(e) Avg. Issuer Premium PMPM (before all subsidies)	\$674	\$602	-11%	\$568	-16%
(f) Avg. Member Premium PMPM (net of all subsidies)	\$221	\$197	-11%	\$195	-12%
(g) Avg. Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$565	\$504	-11%	\$476	-16%
(h) Benchmark Silver Prem. PMPM, Age 40 (non-APTC-eligible)	\$530	\$479	-10%	\$446	-16%
(i) Lowest Off-Marketplace Silver Prem. PMPM, Age 40 (no CSR rate load)	\$470	\$425	-10%	\$396	-16%
(j) Lowest Bronze Prem. PMPM, Age 40 (non-APTC-eligible)	\$391	\$354	-10%	\$329	-16%
				\$321	-18%
(k) Avg. Issuer Loss Ratio (claims net of risk adj.)	80%	79%		78%	
(l) % Change in Volatility of Avg. Issuer Loss Ratio	n/a	-8%		+2%	0%
Claims Impacts					
(m) Gross Claims PMPM (before waivers and HCRP)		\$540			
(n) Net Claims PMPM (net of waivers and HCRP)	\$540	\$475	-12%	\$446	-17%
(o) % Change in Absolute (PMPM) Volatility of Net Claims (entire market)	n/a	-28%		-16%	0%
(p) % Change in Relative (% of Claims) Volatility of Net Claims (entire market)	n/a	-18%		+2%	0%
Implementation and Funding					
(q) Key Implementation Requirements	n/a	1332 waiver			State-Based Exchange
(r) Total Funding Cost PMPM	\$0	\$64		\$94	\$20
(s) APTCs PMPM	\$453	\$404	-11%	\$372	-18%
(t) Federal Pass-through Funding PMPM (1332 waiver)	\$0	\$45		\$76	\$0
(u) State Funding Cost PMPM	\$0	\$20.00			
(v) Federal Responsibility %	n/a	69%		79%	0%
(w) Premium-Impact-to-State-Funding-Cost Ratio	n/a	1.19		1.28	1.00

Notes: Values are rounded. Except where noted otherwise, all PMPM values are stated relative to total individual QHP market membership, both APTC-eligible and non-APTC-eligible.

FIGURE 31: INDIVIDUAL QHP POPULATION COMPOSITION, AFTER REWEIGHTING
MEDICAID EXPANSION SCENARIO

ENROLLMENT DISTRIBUTION							
ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE							
AGE BAND	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	TOTAL
Age < 18	0.8%	1.0%	0.6%	1.2%	1.0%	3.0%	7.5%
Age 18-25	0.7%	1.1%	0.6%	1.4%	1.1%	2.0%	7.0%
Age 26-34	1.3%	2.1%	1.2%	2.6%	2.1%	4.2%	13.5%
Age 35-44	1.3%	2.0%	1.1%	2.4%	1.9%	4.0%	12.7%
Age 45-54	1.7%	2.6%	1.5%	3.3%	2.6%	4.9%	16.5%
Age 55-64	2.5%	3.9%	2.2%	4.7%	3.7%	6.7%	23.7%
Age ≥65	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.9%
On-Marketplace Total	8.3%	12.8%	7.2%	15.9%	12.6%	25.0%	81.9%
Off-Marketplace Total							18.1%
Grand Total							100.0%

AVERAGE HHS-HCC PLAN LIABILITY RISK SCORE							
ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE							
AGE BAND	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	TOTAL
Age < 18	1.020	0.405	0.362	0.474	0.610	0.230	0.431
Age 18-25	2.022	0.579	0.486	0.675	0.646	0.298	0.664
Age 26-34	2.041	0.918	0.825	0.988	1.122	0.420	0.912
Age 35-44	1.997	1.063	1.018	1.274	1.415	0.543	1.082
Age 45-54	3.241	1.531	1.483	1.929	1.999	0.911	1.670
Age 55-64	4.856	2.037	2.235	2.707	2.780	1.315	2.398
Age ≥65	6.780	2.375	2.292	3.015	4.287	2.031	3.108
On-Marketplace Total	3.060	1.352	1.364	1.699	1.798	0.755	1.480
Off-Marketplace Total							1.448
Grand Total							1.474

**FIGURE 32: INDIVIDUAL QHP POPULATION COMPOSITION, AFTER REWEIGHTING
NON-EXPANSION SCENARIO**

ENROLLMENT DISTRIBUTION							
AGE BAND	ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE						TOTAL
	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	
Age < 18	0.6%	0.4%	0.4%	0.8%	2.1%	3.4%	7.8%
Age 18-25	0.3%	0.7%	0.6%	1.5%	3.8%	1.7%	8.7%
Age 26-34	0.6%	1.0%	0.8%	1.9%	4.8%	3.3%	12.4%
Age 35-44	0.6%	1.1%	0.8%	2.1%	5.3%	3.5%	13.4%
Age 45-54	0.8%	1.4%	1.1%	2.7%	7.1%	4.3%	17.4%
Age 55-64	1.1%	1.8%	1.4%	3.4%	8.3%	5.9%	22.0%
Age ≥65	0.0%	0.1%	0.1%	0.2%	0.5%	0.1%	1.0%
On-Marketplace Total	4.2%	6.6%	5.2%	12.6%	32.0%	22.1%	82.6%
Off-Marketplace Total							17.4%
Grand Total							100.0%

AVERAGE HHS-HCC PLAN LIABILITY RISK SCORE							
AGE BAND	ON-MARKETPLACE, BY PLAN TYPE AND AGE RANGE						TOTAL
	PLATINUM / GOLD	SILVER (STANDARD)	SILVER (73% CSR AV)	SILVER (87% CSR AV)	SILVER (94% CSR AV)	BRONZE	
Age < 18	1.355	0.587	0.514	0.586	0.748	0.271	0.554
Age 18-25	1.706	0.773	0.797	0.953	0.867	0.371	0.804
Age 26-34	2.691	1.278	1.054	1.204	1.251	0.557	1.121
Age 35-44	2.719	1.369	1.194	1.403	1.560	0.640	1.315
Age 45-54	3.945	1.825	1.793	2.050	2.278	0.938	1.919
Age 55-64	4.838	2.485	2.581	3.028	3.063	1.442	2.636
Age ≥65	7.250	5.355	4.039	2.839	3.204	1.440	3.237
On-Marketplace Total	3.267	1.690	1.625	1.862	1.954	0.829	1.663
Off-Marketplace Total							1.654
Grand Total							1.651

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