

When adverse selection isn't: Which members are likely to be profitable (or not) in markets regulated by the ACA



Jason Siegel, FSA, MAAA
Jason Petroske, FSA, MAAA

What will happen to a health plan that enrolls a different mix of members in 2014 than anticipated? Understanding the risks and opportunities underlying enrollment mix is critical to achieving smart growth, yet the answer to this seemingly simple question is not obvious given the complexities of the rules that will be in place.

TRADITIONALLY, HEALTH PLANS HAVE BEEN MOTIVATED TO ATTRACT AND RETAIN HEALTHY¹ INDIVIDUALS

By maintaining a mix of members that is healthier than average, prior to 2014 an issuer could keep rates low while reducing its risk. Many times, though, those with the greatest need for health insurance would have the most difficulty obtaining it.

Beginning in 2014, when major provisions of the Patient Protection and Affordable Care Act (ACA) become effective, including guaranteed issue and community rating, many people with poorer health will have the opportunity to purchase insurance—some for the first time—and at premium rates the same as those charged to their healthier peers. Insurers are wary of the unknown financial impacts inherent in this market shift.

To address this risk, the federal government introduced the “3Rs” to help insulate insurers. The 3Rs include transitional reinsurance and risk corridor programs, along with a permanent risk adjustment mechanism. However, the extent to which issuers will be protected by these programs is not obvious because they interact in a complex manner. This paper explores the net impact of these programs, in particular risk adjustment, when members of varying characteristics are enrolled in a plan. In particular, we investigate the financial impact to a health plan of enrolling a membership base with different demographic and morbidity characteristics than those that were anticipated when developing rates.

The results of our analysis are, in most cases, the precise opposite of what one would expect without these programs. In several important ways, the nuances and interactions inherent in the 3Rs can generate impacts that actually turn traditional risk management practices upside down.

NEWBORNS, ADULT FEMALES, AND THE ELDERLY APPEAR TO BE MORE PROFITABLE THAN OTHER MEMBERS

The table in Figure 1 displays the estimated profit margin, both before and after accounting for the impact of the 3Rs, that a health plan might expect for each demographic group in 2014. We assume premium rates were developed to achieve a 3% pretax pricing margin when covering market average morbidity and demographics. Newborns and the elderly are the most profitable segments after building in the impact of the 3Rs. Notice that these same members would result in losses in the absence of the 3Rs.

FIGURE 1: PRETAX PROFIT MARGIN BY DEMOGRAPHIC GROUPING ASSUMING A 3% PRICING MARGIN BUILT INTO RATES

AGE GROUP	MALE		FEMALE	
	PRE-3Rs ²	POST-3Rs	PRE-3Rs	POST-3Rs
0	-317.6%	18.0%	-339.4%	14.2%
1	-33.1%	-4.3%	-18.4%	-6.3%
2-4	5.6%	-3.0%	11.2%	-5.0%
5-9	13.8%	-3.7%	22.5%	-4.3%
10-14	5.3%	-3.2%	10.8%	-3.0%
15-20	-6.6%	2.2%	-24.5%	2.1%
21-24	34.8%	-3.0%	-5.8%	-0.3%
25-29	34.3%	-3.2%	-31.5%	1.0%
30-34	32.0%	-2.9%	-32.3%	2.5%
35-39	25.2%	-1.1%	-25.1%	5.4%
40-44	13.0%	-0.4%	-23.1%	6.2%
45-49	7.6%	2.5%	-16.3%	6.9%
50-54	4.1%	4.9%	-9.9%	6.8%
55-59	2.4%	7.1%	-3.8%	6.6%
60+	-8.8%	7.3%	-4.9%	6.7%
Composite	6.7%	2.2%	-14.7%	4.5%
Unisex Composite³			PRE-3Rs	POST-3Rs
			-3.6%	3.3%

1 “Healthy” in this context refers to groups of members that are expected on average to have low claim costs (i.e., those who are young or lack medical conditions). Some healthy members could still have high claim costs in any particular year.
 2 The pre-3Rs columns exclude the impact of transitional reinsurance recoveries, risk corridors, risk adjustment, and MLR rebates. They include the impact of rating restrictions (e.g., unisex 3:1 age slope) and new taxes/fees required under the ACA.
 3 Composite post-3Rs margin varies from pricing margin, which is due to MLR rebates and risk corridors. Pre-3Rs margin varies from pricing margin, which is due to the health plan not receiving reinsurance recoveries built into rates.

Looking at an example, the post-3R profit margin for a female between 40 and 44 years old is 6.2%. This means that a company with its book of business consisting entirely of a sample of members within this demographic group, priced accurately for the market average demographic and morbidity, should expect an average profit of 6.2% of premium after accounting for all applicable cash flow impacts, e.g., transitional reinsurance, risk adjustment, risk corridors, medical loss ratio (MLR) rebates, etc.

With few exceptions, profit margin increases dramatically with age when considering all ACA impacts. This occurs despite restrictions under the ACA requiring that the oldest applicants be offered premium rates no more than three times the youngest adults.⁴ In the absence of risk adjustment and the other Rs, you can see that this age slope restriction would result in many younger male members subsidizing older members, given that the difference in expected claim costs between the oldest and youngest adults is substantially more than 3 to 1. The requirement for unisex rating has a similar effect. These profit results are evident in the pre-3Rs profit margins shown in Figure 1.

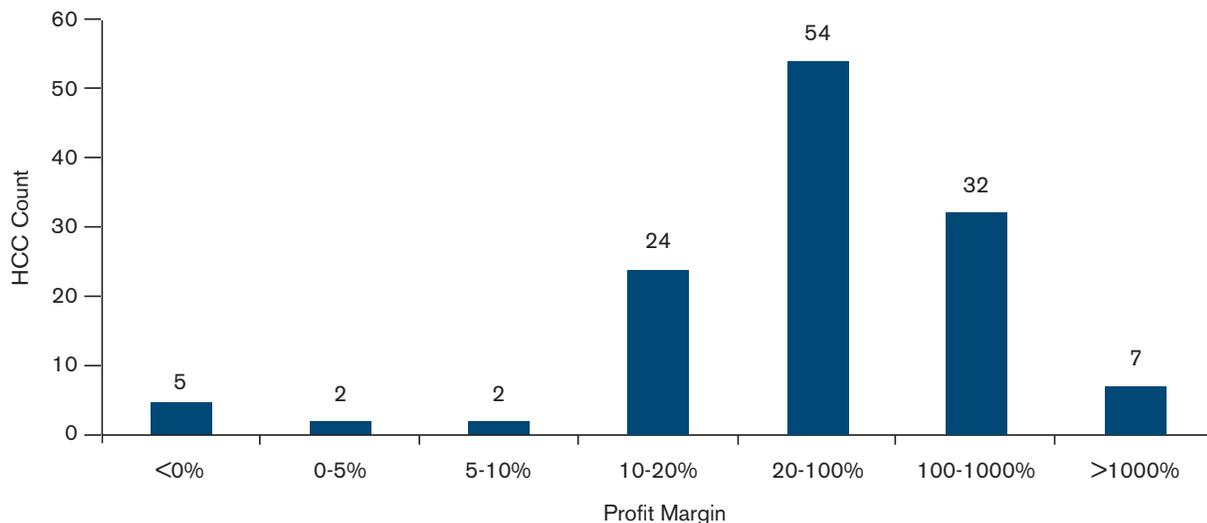
The implementation of the 3Rs could create an incentive to attract and maintain a block of business that is demographically older and more female than one's competitors. A key condition in

order for this result to hold is that the market as a whole enrolls a standard mix of members (i.e., ranging from young to old and healthy to unhealthy). Note that the risk adjustment mechanism is zero-sum, with all payments to plans from the pool backed by corresponding payments from plans into the pool. So for one plan to be protected from the risk of covering older members and adult females, another plan must cover younger male members. This mechanism does not protect health plans from market-wide changes in enrollment. Given the enrollment difficulties in a number of exchanges and the ability of people to "keep what they have" in some states, many markets may not end up enrolling a typically standard mix of individuals.

MEMBERS WITH CONDITIONS SUBJECT TO RISK ADJUSTMENT APPEAR TO BE MORE PROFITABLE THAN MEMBERS WITHOUT SUCH CONDITIONS

The risk adjustment model developed by the U.S. Department of Health and Human Services (HHS) classifies medical conditions into many Hierarchical Condition Categories (HCCs), which affect a member's risk score. The chart in Figure 2 presents the number of HCCs organized by the ranges of profit margin that a health plan might expect for members with that HCC in 2014, assuming it priced to a 3% pretax profit margin on the market average risk. These profit margins include the impact of the 3Rs.

FIGURE 2: COUNT OF CONDITIONS BY PRETAX PROFIT MARGIN ⁵



4 For additional information on these restrictions, see "The young are the restless: Demographic changes under health reform" by Mary van der Heijde and Doug Norris, available at <http://www.milliman.com/insight/health/The-young-are-the-restless-Demographic-changes-under-health-reform/>.

5 126 out of the 127 HCCs are included in this table. The remaining condition did not show up in the data used for this analysis.

So, for example, the leftmost bar in this chart indicates that only five out of the total 127 HCCs handled by the HHS model result in a net loss to the health plan. The next bar to the right of that indicates that two HCCs result in a profit between 0% and 5% of premium, the typical range in which health plans traditionally set rates. The remaining HCCs all result in profit margins greater than this typical amount a plan would likely rate for, in some cases substantially greater. For example, the rightmost bar in this figure indicates that seven conditions would actually produce profit margins in excess of 1,000% of premium.

Thus, by covering members with almost any HCC condition, an issuer should expect a greater average profit margin for those members than the average margin built into its aggregate rates. Bear in mind that in practice there may be very few members with some conditions, and these members may be difficult or impossible to identify in advance.

At the other end of the spectrum, insurers that cover only members without a condition recognized by the HHS HCC model will make payments into the risk adjustment pool large enough to produce an average pretax loss of approximately 5.0% of premium.⁶

HOW CAN MEMBERS WITH HIGH RISK SCORES BE MORE PROFITABLE THAN MEMBERS WITH LOW RISK SCORES?

Newborns, adult females, the elderly, and members with HCC conditions will likely produce higher expected profits for at least the following three reasons:

1. The HCC coefficients for most conditions handled by the risk adjustment program are higher than the average relative costs of those conditions (this factor drives the vast majority of our results).
2. The payment mechanisms for the transitional reinsurance and risk adjustment programs do not interact, so issuers in the individual market can effectively be reimbursed twice for many high-cost claimants (once through risk adjustment and again, partially, through reinsurance). Based on language included in the preamble to the governing regulations, this may be by design.
3. The basis for the risk adjustment transfer payments is statewide average premium (instead of average claims, which in many cases would be more theoretically correct). This creates a leveraging effect whereby those paying into the pool tend to pay too much and those receiving funds tend to receive too much.⁷ Presumably premium is used because, in practice, premium data will be more readily available than claims. This factor did not significantly impact the results reported in this paper because we modeled the majority of expenses as a percent of premium (so the risk transfer methodology in this case is fairer).

While these results are counterintuitive, remember that individuals with the lowest risk score are not always those with the lowest claim costs. Among members with any particular medical condition there will certainly be some with high costs for which a health plan will lose money, and others with the low costs for which the plan would make money. When we composite results over all members diagnosed with each of the conditions handled by the HHS model, we find that for most of these conditions the plan will make money on average.

Note that between 2014 and 2016 the parameters that define the 3Rs are designed to change, whereas all results reported in this paper are based on the 2014 parameters only. For example, federal transitional reinsurance is expected to reduce in value in 2015 and 2016, and completely disappear starting in 2017. Because reinsurance is one contributor to these results, its absence will serve to dampen the effects illustrated in Figure 1 and Figure 2. On the other hand, risk corridors serve to dampen the impacts reported in Figure 1 and Figure 2. The cessation of these two programs beginning in 2017 will accentuate these patterns. Risk adjustment, the primary driver of these results, is a permanent feature of the ACA.

METHODOLOGY AND KEY ASSUMPTIONS

Our analysis is based on the premise that a health plan expects to enroll a membership base consisting of a standard mix of members when developing rates, and then enrolls a different mix. An alternate statement of this is that the plan does not project the actual membership mix it ultimately enrolls, and, as a result, it does not incorporate a correct adjustment for risk transfer payments into rates.

We began our analysis by running the Truven Health Analytics 2010 MarketScan[®] Commercial Claims and Encounters (MarketScan) database through Milliman's internal implementation of HHS's Hierarchical Condition Category Risk Adjustment models. From there, we aggregated the data and developed a rate manual using only allowable rating factors for a qualified health plan (QHP) in the individual market in 2014 when all key provisions of the ACA are in effect. We incorporated reasonable assumptions for items such as taxes and fees, quality improvement expenses, pretax profit margin, and benefit relativities. For each demographic and HCC condition, we independently simulated all cash flows that would occur if a health plan only enrolled members of that demographic or condition cohort, including premium earned, claims incurred, administrative expenses, the impact of all of the 3Rs, potential MLR rebates, and income taxes. We then simulated the PMPM profit impact of enrolling all members of each demographic or condition, one cohort at a time.

⁶ Note that there are many conditions not handled within the HHS HCC model, so the absence of HCCs for a given member does not mean the same thing as that member having zero dollars of claims.

⁷ In our modeling we made reasonable assumptions regarding which expenses should be calculated as per member per month (PMPM) and which as a percent of premium. This leveraging effect only occurs to the extent that not all expenses are proportional to premium.

The database we used for this study reflects nationwide healthcare experience for insured employees, spouses, and dependents, as collected from approximately 100 different insurance companies, Blue Cross Blue Shield plans, and third-party administrators. HHS used this same initial source when developing the models for the 2014 risk adjustment program. We limited the MarketScan data to only those members with both medical and prescription drug coverage where an explicit consistent plan design was available within the data. We also limited to members with robust coding of diagnoses and other key fields. Finally, we excluded any non-newborn members coded with newborn HCCs and claimants involving significant capitation arrangement. After restricting the data set, roughly 9.3 million member months with allowed charges totaling \$3.2 billion remained for this analysis. We are not aware of the extent of data scrubbing HHS applied when developing the HHS HCC model compared with what Milliman did.

We used the expected pretax profit margin for a theoretical cohort of members (i.e., all members of a given demographic or with a given HCC) insured by a QHP in the 2014 individual market as our primary comparison metric. In order to calculate these profits, we began by developing a PMPM premium rate from our restricted MarketScan data as though it were the membership and experience of a hypothetical carrier in 2014. We assumed that this “carrier” participates in the exchange (and thus will be eligible for risk corridors) and is large enough such that we did not have to consider MLR credibility adjustments. We generated a required premium rate PMPM starting with total paid claims (which were assumed to cover only essential health benefit [EHB] services), membership, administrative expenses, and the impact of federal reinsurance. If this were the entire marketplace, we essentially assumed that all carriers would rate exactly the same. The table in Figure 3 lists the quantitative assumptions used in the development of the premium rate.

**FIGURE 3: MANUAL RATE DEVELOPMENT
PRICING ASSUMPTION SUMMARY**

KEY ASSUMPTION	VALUE
Pretax Profit	3.0% of Premium
Premium Tax	2.0% of Premium
Quality Improvement	2.0% of Premium
General Admin. and Commissions	14.9% of Premium
Health Insurance Provider Fee	1.5% of Premium
Exchange Fee	3.5% of Exchange Premium
Reinsurance Contribution	\$5.25 PMPM
Other ACA PMPM Fees ⁸	\$0.25 PMPM

⁸ Includes risk adjustment fee and Patient Centered Outcomes Research Initiative fee.

⁹ On December 2, 2013, HHS proposed revising the reinsurance program attachment point for 2014 from \$60,000 to \$45,000, as well as changing the risk corridor formula in response to the expectation of lower enrollment in ACA-eligible health plans to which these programs apply. We have not incorporated these proposed changes into our analysis.

As a simplifying assumption, we ignored the effects of geography, tobacco rating, and restrictions on rating for families with more than three children. Additionally, we assumed that administrative expenses do not vary by plan. In the premium development, we did not adjust for risk corridors, risk adjustment, or MLR rebates. Risk corridors and MLR, for most purposes, should be excluded from rate development, and the aggregate impact of risk adjustment across all cohorts in our analysis should be zero (because our hypothetical carrier covers the entire market within its experience).

We calculated an actuarial value (AV) for all unique plans according to the HHS AV calculator and assigned each to a specific metallic level (i.e., bronze, silver, gold, or platinum). We developed plan factors for each metallic level (based on the 2014 benefit and payment parameters prescribed by HHS for actuarial value and induced demand) and again in composite. We calculated a composite age factor from the data's demographic characteristics and the age factors prescribed by the Centers for Medicare and Medicaid Services (CMS). We used this composite age factor in conjunction with the composite plan factor to develop our base rate from the required premium PMPM.

We modeled total expected premium by cohort from the base rate and allowable rating factors. We summed aggregate claims by member directly from the MarketScan database and estimated all expected expenses and fees (excluding income tax) based on the assumptions in Figure 3.

Although there is uncertainty surrounding the ability of the 2014 reinsurance program to cover all member claims within the prescribed annual claim ranges, we assumed full payouts from the program. We calculated the expected reinsurance recovery by member as 80% of the annual incurred claim costs between \$60,000 and \$250,000. We followed the HHS prescribed methodologies when producing the risk adjustment and risk corridor payments. In particular, we estimated risk corridor payments and/or receipts by allocating allowed costs across all metallic plans, calculating target allowed amounts consistent with the regulatory guidance, and applying the required risk-sharing parameters.⁹

We estimated the MLR payment by first adjusting for all claim and premium credits along with the impacts of transfer payments and/or receipts of any of the 3Rs. We then compared the resulting loss ratio to the 80% MLR benchmark and projected rebates for those cohorts falling short of this target. For purposes of calculating MLR rebates and risk corridor payments/receipts, we effectively assume that each cohort is covered by a separate entity. In practice, a health plan would not cover only members of a certain demographic or with a certain condition; rather, this analysis illustrates the potential impacts of covering more or less a certain cohort.

We calculated total pretax profit by cohort from the charged premium, incurred claims, expenses, taxes and fees, and government transfers. We calculated income tax assuming that the health plan is a for-profit entity and pays income tax of 35% of profit (where profit in this context ignores the impact of the health insurance provider fee). Note that we only use income tax in order to correctly calculate the impact of risk corridors and MLR rebates; the final profit metric reported in our analysis is on a pretax basis.

We performed several sensitivity and data integrity tests to gain more comfort around the reliability of our results. We found that the average metallic level within the data was quite rich (i.e., primarily platinum and gold). This makes sense given that the data is heavily weighted toward the large group market. To mitigate anti-selection and normalize for the differences in the risk adjustment models by metallic tier, we ran the same analysis with all data, and then again for members within each metallic level by themselves. We also analyzed the results with and without the filters applied when scrubbing the data. As a final test, we separated the demographic results by metallic level and weighted the profit outcomes to a metallic distribution more representative of what we are likely to see in the 2014 marketplace (i.e., primarily bronze and silver). While the absolute values of the PMPM profits by demographic changed within each scenario test, as did the specific conditions that comprised the top and bottom HCCs in terms of PMPM profit, the patterns did not substantially deviate from the results presented in this study. Finally, we compared the calculated average annual costs for a number of key conditions to estimated costs based on clinical research to further validate the results. These reasonability checks validated that the patterns in the analysis are likely to be real and stable.

We are performing additional analyses to confirm these results which rely on simulating paid claims from actual allowed charges (as opposed to using actual paid claims). This alternate methodology will allow us to use substantially more data since we will not be restricted to using only the experience of members with a plan designed specified in the data and meeting the metallic AV requirements.

CONCLUSIONS

There is a general understanding that the 3Rs will create winners and losers among health plans. What is surprising, though, is how skewed the results can be by HCC condition and demographic with respect to the overall profitability of a health plan. Our analysis suggests that nearly all additional members with conditions included in the HHS risk adjustment model will likely lead to favorable financial results for a plan compared with the assumptions used to price it. At the other end of the spectrum, all additional members who do not have an HCC coded in 2014 will result in worse financial results for a plan. In addition, there may no longer be the same incentive to attract the “young invincibles” to help pay for older members. It may actually be a detriment if a company insures a large proportion of young policyholders.

It is important to note that these results for a particular health plan rely on the market as a whole to enroll an average mix of members by age and health status. For example, if all members enrolling in a commercial health plan in 2014 were 60 years old, then 60-year-olds would no longer produce the higher-than-average profit margins reflected in Figure 1. Rather, with no younger members paying into the risk adjustment pool, health plans would incur the cost of the 3-to-1 rate restrictions without the offsetting benefit of risk adjustment, and likely lose money. While a scenario this extreme is not likely in reality, delays in the implementation of many state exchanges, along with the extension in some states of plans that were going to be terminated at the end of 2013, will likely result in an older and sicker membership base than was expected in many markets.

With the introduction of risk adjustment to the commercial market, there will be additional motivation for health plans to improve diagnosis coding practices so that members receive the highest appropriate risk score. This will likely generate great interest in the near term as companies begin to fully understand the impacts of risk adjustment on their organizations and attempt to develop competitive strategies within their markets.

We may also see carriers begin to rethink how they structure their plan designs to attract an optimal enrollment mix. We expect this area to gain momentum as issuers begin planning their 2015 rate development. We are continuing our research in this critical area.

LIMITATIONS

Given the many unknowns in the 2014 commercial insurance market, results will likely differ from those presented in this paper. The following limitations should be considered when analyzing our results.

MarketScan is primarily composed of data from the large group market. It is possible that the disease prevalence rates calculated from these data will be higher or lower than what would otherwise be expected in the individual market. In addition, future HCC prevalence rates for the individual market will depend heavily on both the migration of currently uninsured individuals into the insured market and the impact of the prohibition on medical underwriting for benefit plans effective as of January 2014. The individual market may also experience greater adverse plan selection among members than the large group market because of the much wider availability of plans and benefit level choices for each individual. We relied on the demographic/morbidity mix that exists in MarketScan, which could vary in practice from the true individual market mixes.

While resulting in lower profit margins to the issuer, our modeling assumes that younger, healthier members are represented in the insurance market in plans subject to risk adjustment. If these members do not purchase insurance products at the expected rate, the entire risk adjustment payment pattern will shift to a new “1.0” level.

This would result in a greater tendency for issuers covering members with conditions to have lower profit outcomes (or even losses) than illustrated in this paper. Those insuring the less-healthy members will tend to lose less than those insuring the healthier members, but at some point the patterns by condition and demographics that we illustrate in this paper will break down. We may see a substantial degree of adverse selection in those covered in 2014 by plans eligible for risk adjustment, given the recent enrollment difficulties in many exchanges and the extension of plans that would otherwise have been terminated at the end of 2013.

The claims experience within MarketScan is derived from plans that do not necessarily conform to forthcoming ACA requirements, such as meeting prescribed actuarial value ranges and covering all essential health benefits mandated by each state. The plans included in our analysis are highly skewed toward gold and platinum levels, which will likely not be the case in the 2014 individual market. At the condition level, the data is limited in many HCCs. Consequently, not all results by condition can be considered fully credible.

All reported results represent an average across many members, and each cohort—whether by demographic or condition—is comprised of a wide range of members. That is, any one member's experience will likely deviate from the average within that person's cohort. Further, this analysis implicitly assumes perfect knowledge of all cash flows in advance whereas in practice this will not be the case. We also assumed financial results are uniform across all carriers.

Throughout, our analysis assumes insurers are operating in a state with the default federal risk adjustment methodology and age rating curve. For example, we did not model the impact of New York's family tiered community rating structure, nor the alternative risk adjustment methodology approved for Massachusetts.

These results represent one possible scenario, which is based on a number of assumptions, including an expense structure that is not necessarily representative of any particular health plan. These results would be different if any of these assumptions were altered.

Note that risk adjustment transfer payments occur in the middle of the year following the benefit year. So a health plan targeting members for which it expects to receive a transfer payment could experience surplus strain in the interim.

Lastly, one should note that HHS could update or refine details regarding the implementation of the 3Rs, at which time the results presented in this analysis may no longer apply. For example, several changes to the transitional reinsurance program and the risk corridors program for 2014 have been proposed recently; they have not yet been incorporated into this analysis.

Jason Siegel, FSA, MAAA, is a consulting actuary with the Milwaukee office of Milliman. Contact him at jason.siegel@milliman.com.

Jason Petroske, FSA, MAAA, is a project manager with the Milwaukee office of Milliman. Contact him at jason.petroske@milliman.com.

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