

Prepared by:

Ksenia Whittal, FSA, MAAA

Douglas T. Norris, FSA, MAAA, PhD

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Value of ACA coding improvement: Market share and market effects

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EXECUTIVE SUMMARY

A permanent feature of the Patient Protection and Affordable Care Act of 2010 (ACA), the risk adjustment program aims to mitigate risk selection issues in the commercially-insured guaranteed issue individual and small group markets. Prior to the implementation of the ACA's premium rating rules in 2014, most states allowed carriers to medically underwrite potential individual and small group policyholders and account for their expected future risk levels in pricing. Under the ACA, carriers are only allowed to vary an individual member's rates by age (within a prescribed age rating structure), geographic rating area, tobacco status, and the benefit plan chosen. If, after all enrollees sign up for care in a given year, one particular carrier receives a disproportionate share of high-cost individuals in the market, there needs to be a mechanism to compensate that carrier for the additional risk assumed.

The mechanism used by the ACA is the risk adjustment program's transfer formula, which compares:

- (1) The "actual" risk of an insurer's membership (relative to the market) against
- (2) The portion of risk that the insurer could properly rate for (relative to the market)

To the extent that the first quantity exceeds the second, the insurer would receive a transfer payment to compensate. These payments would be funded by charges to those of the insurer's peers who experienced less "actual" risk than was priced for. In fact, the entire risk adjustment program is designed to be revenue neutral within each market and state. This is a key difference from other prominent risk adjustment programs (such as that used in the Medicare Advantage program), where carriers are compared against a fixed baseline. In those programs, it is conceivable that every carrier in the market can improve its position by undertaking coding completeness efforts because the baseline does not change. In the ACA's risk adjustment program, when one carrier improves its claim coding position, all other carriers in the market must fund that improvement in amounts proportional to their relative market sizes. A consequence is that as a carrier's relative market size increases, the potential gain from coding completeness efforts decreases. In an extreme example, a carrier that controls an entire market will see no risk adjustment benefit from coding efforts because there are no other carriers to fund their gain.

Ideally, the market would have a flawless window into the actual health of each enrolled member, and would, therefore, be able to perfectly compensate each carrier for the actual relative risk that it is enrolling. However, the measurement of member risk is not nearly this precise (or accurate). Under the ACA's risk adjustment program, a member's risk is measured using the Department of Health and Human Services hierarchical condition categories (HHS-HCC) risk adjuster model, one of many predictive models commonly used in the health insurance industry to estimate an individual's risk. In this particular model, carriers are incentivized to capture all existing member diagnoses that trigger any of the predefined 146 hierarchical condition categories (HCCs) and condition groupings; by doing so, the carrier will maximize its average plan liability risk score and, therefore, optimize its revenue transfer position relative to the market.

As a natural consequence, a great deal of attention and resources are put into diagnosis coding improvement efforts, which (among other things) can include sophisticated analytics to help identify cases of missing diagnoses, on-the-ground implementation through chart reviews, incentivization of additional primary care visits to enrollees, and provider coding training. An entire industry of companies specializing in the full menu of coding improvement services has emerged over the last two years. The hefty price tags that are frequently involved do raise questions of value and return on investment. Given the diversity of carriers and markets across the country, is it likely that every carrier will derive the same relative value out of coding improvement efforts?

In this report, we focused on evaluating the change in transfer amount as a result of identifying additional HCCs within a population by studying the impact of carrier size, market share, market size, and other variables in the risk adjustment transfer formula. We used 2014 actual market results as published in the September 17, 2015, report.¹ A carrier implementing a coding improvement program for the 2016 benefit year would obviously prefer to use the 2016 values relevant to its market, but until time travel has been perfected, this is impractical. Reasonable people may disagree as to how much the market's plan liability risk score (PLRS) will change between 2014 and the coming benefit year. One argument supporting the assumption that this factor will be lower in future years is that healthier individuals (either uninsured in 2014 or enrolled in grandfathered or transitional plans) will join the market. Alternatively, market-wide coding completeness efforts could increase the overall PLRS. Other market-level factors in the transfer formula will change as well, and a carrier's market share will also change from year to year. Finally, the costs associated with various coding improvement efforts would vary greatly from carrier to carrier and in the coming years. In order to best estimate the actual return on investment from a proposed coding improvement initiative, we strongly recommend that carriers work with their actuarial staff to best estimate market conditions for the benefit year under consideration.

¹ Centers for Medicare and Medicaid Services (September 17, 2015). Summary Report on Transitional Reinsurance Payments and Permanent Risk Adjustment Transfers for the 2014 Benefit Year, revised September 17, 2015. Accessed January 12, 2016, at <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Premium-Stabilization-Programs/Downloads/RI-RA-Report-REVISED-9-17-15.pdf>.

In this report, we also assume that a carrier's coding improvement efforts are done in isolation, with the rest of the market staying unchanged (other than the overall market impact from the carrier's efforts). In reality, all carriers in a market are considering efforts to improve their ACA claim coding (as described above). Furthermore, some coding improvement efforts will influence the market as well—for instance, efforts to educate providers on proper claim coding could benefit multiple carriers when their enrollees use these same providers.²

Ultimately, a carrier considering a coding improvement effort should compare the effect that such an effort will have on its risk transfer payment (receipt) against the cost of the effort. Vendors will offer their own solutions (with both direct and indirect costs to the carrier), and it is critical to line up those costs with the estimated gain to be realized.

Key findings

Given the parameters of the risk adjustment transfer mechanism and the actual results of the 2014 benefit year transfers, we came to the following conclusions regarding the potential increase in the per-member per-month (PMPM) transfer amount for a carrier undertaking a coding improvement program.

- The lower the carrier's market share, the greater the potential improvement in risk adjustment transfer amount on a PMPM basis because the transfer amount is calculated relative to the market average risk score and rating factors. Carriers with a large portion of the market will receive or pay relatively little because their risk score will more closely represent the market average.
- Holding a carrier's market share as fixed, the larger the (absolute) market size, the smaller the risk adjustment transfer potential improvement on a PMPM basis for a carrier. This is because an increase in market size increases the number of existing members with conditions (for both the carrier and for the market), which dilutes the impact that an additional 100 risk score points can have. However, the potential in terms of total dollars is slightly higher in larger markets.
- As a corollary to this conclusion, based on the 2014 results, we observed larger absolute average transfers (on a PMPM basis) in the small group versus individual market due to both the larger market size of the individual ACA market relative to small group ACA market and the higher market average premiums in the small group ACA market. This has implications by state, particularly for carriers operating in multiple states.
- The higher the market average risk score, the smaller the risk adjustment transfer potential improvement for a carrier. The larger the market average risk score, the smaller the impact of the additional HCC(s) coefficient(s) on transfer amounts. This has implications by state, particularly for carriers operating in multiple states.
- Risk adjustment transfer potential improvement from an additional HCC increases as a carrier's average risk score (relative to the market risk score) decreases. Thus, the addition of an HCC has a moderately greater impact on a carrier with a lower starting risk score as compared with the market average score.
- In the context of change in the risk adjustment transfer due to improved coding, the addition of HCC coefficient(s) affects the PLRS only. Assuming no other changes in the plan membership, the average actuarial value (AV) and allowable rating factor (ARF) will not differ, and thus will have no effect on the change in the transfer. The induced demand factor (IDF) and geographic cost factor (GCF) both act as scalars to the plan's average risk score, and will proportionally amplify the change in PLRS in the risk adjustment transfer calculation. Similarly, the payoff of adding additional HCCs is greater in states with a higher average market premium, compared with states with a lower average market premium, because the market premium has a scaling effect on the final transfer amounts.

Note that our modeling ascribed a fixed level of total coding improvement to a carrier (100 "risk score points" across the carrier's population). It is easier to achieve this goal with a larger population (for instance, in a population of 1 million members, finding 100 previously undiagnosed risk score points could be a trivial exercise, while it would be essentially impossible in a population of one).

On the other hand, the benefit to a carrier's risk adjustment transfer amount incrementally decreases with each fixed level of coding improvement (so the first 100 risk score points found will benefit a carrier more than the next 100 risk score points, etc.) because the market-level risk score increases with each carrier gain.

² Berger, C. (December 2015). Coding improvement for commercial exchange plans: Is it worth the cost? Accessed January 12, 2016, at <http://us.milliman.com/insight/2015/Coding-improvement-for-commercial-exchange-plans-is-it-worth-the-cost/>.

METHODOLOGY

Risk adjustment transfer formula

Let us recall the risk adjustment transfer formula currently in place for ACA risk adjustment within a market.

$$T_i = \left[\frac{PLRS_i \times IDF_i \times GCF_i}{\sum_i (S_i \times PLRS_i \times IDF_i \times GCF_i)} - \frac{AV_i \times ARF_i \times IDF_i \times GCF_i}{\sum_i (S_i \times AV_i \times ARF_i \times IDF_i \times GCF_i)} \right] \times \bar{P}_s$$

Where: T_i = i's transfer payment/receipt PMPM

\bar{P}_s = state average premium

$PLRS_i$ = plan i's plan liability risk score

IDF_i = plan i's induced demand factor

GCF_i = plan i's geographic cost factor

S_i = plan i's share of state enrollment

AV_i = plan i's metal level AV

ARF_i = plan i's allowable rating factor

and the denominator is summed across all plans in the risk pool in the market in the state.

The left side of the formula can be interpreted as the “actual” risk of an insurer’s membership (relative to the market), and the right side of the formula represents the portion of risk that the insurer could properly rate for (relative to the market). Because no risk adjuster model is perfect in explaining variation in costs, the “actual” risk reflects only a portion of the true underlying risk of the population.

Coding improvement impact

In our modeling, we reviewed the impact that a fixed level of coding improvement would have on a carrier’s risk adjustment transfer under a variety of realistic market conditions. For any given member, the HHS risk adjustment formula is represented by the sum-product of member HCCs (“does the member have condition X?”) and the number of points that the model ascribes to the given condition (along with a demographic factor that cannot be influenced during the benefit year). For example, if an adult diabetic with a silver-level ACA plan has not been previously diagnosed as such, the act of correctly diagnosing that member will increase their risk score by 1.12 points.³

For this report, we chose to examine the impact of a coding improvement level of 100 HCC coefficient points across a carrier's population. This could be accomplished in a variety of ways, including (but not limited to):

- Increasing one (full year) member's risk score by 100 points,
- Increasing 25 (full year) members' risk scores by 4 points apiece
- Increasing 100 (full year) members' risk scores by one point apiece

There are clearly more opportunities to find 100 risk score improvement points across a larger enrolled population (although the effort increases as well). Finding 100 risk score points in a carrier's population would be equivalent to finding approximately 90 undiagnosed diabetics, or approximately 110 undiagnosed asthmatics, or approximately 35 undiagnosed schizophrenics (among other combinations).⁴

It is important to remember something that is hopefully obvious—larger carriers have more members, and the existence of more members leads to a greater potential for risk score coding improvement. If Carrier A's goal is to find a total of 100 undiagnosed risk score points in its population, and Carrier B is 10 times the size of Carrier A, then perhaps Carrier B's goal should be 10 times as large as well.

There is a law of diminishing returns from any coding improvement efforts, reflecting that, for instance, an improvement of 200 risk score points does not benefit a carrier twice as much as an improvement of 100 risk score points. The benefit from coding improvement is monotone (more is always more beneficial than less), but not linear (we will examine this later in the report). Moreover, in any population, there are only a finite number of members with HCCs, and with each additional member identified with an HCC, the likelihood of identifying another one decreases.

³ Using 2014 adult weights in a silver population. See Federal Register (March 11, 2013). Accessed January 12, 2016, at <http://www.gpo.gov/fdsys/pkg/FR-2013-03-11/pdf/2013-04902.pdf>.

⁴ Ibid.

We also assumed that the increase in score from adding the 100 points is certain and focused on the potential impact to a carrier's risk transfer. We did not model the likelihood of recording a risk score increase (due to finding additional HCCs for member(s)) as a consequence of performing any specific coding activity; even if one has strong evidence that an enrollee has missing diagnoses in his or her claim data, it is not certain that both the member has the actual diagnosis and the condition will result in an additional HCC for the claim data (just because we think that a member is a diabetic, it is not guaranteed that he/she has the HCC associated with diabetics). In reality, a carrier would have to target greater than 100 points of potential undiagnosed HCC risk points in order to achieve an actual increase of 100 HCC risk points.

There are different methodologies for performing coding improvement, each with its own strengths and weaknesses, and each with its own cost.⁵ The measurement of an overall return on investment from coding improvement initiatives could be the topic of further research.

Figure 1 below presents a sample calculation of the change in the risk transfer payments for a carrier with the following assumptions:

- Carrier is operational in the individual market in the authors' home state of Colorado and has 10% of that market.
- Carrier's starting average PLRS, average actuarial value (AV), and allowable rating factor (ARF) are identical to the corresponding market average factors.
- The market average values are equal to those in the CMS risk adjustment report released on September 17, 2015.⁶

Because we are interested in the change in the transfer amount as a result of the change in the plan's average liability risk score, the righthand side of the transfer formula (comparing the carrier with the market with respect to rated risk) does not change between the pre-coding-improvement and the post-coding-improvement calculations.

FIGURE 1: SAMPLE CALCULATION OF CHANGE IN RISK TRANSFER PAYMENT AFTER CODING IMPROVEMENT

COLORADO INDIVIDUAL MARKET QUANTITY	PRIOR CODING IMPROVEMENT		POST CODING IMPROVEMENT	
	CARRIER	MARKET	CARRIER	MARKET
Membership (Billable Member Months)	162,482	1,624,815	162,482	1,624,815
Market Share	10%	100%	10%	100%
PLRS (a)	1.372	1.372	1.3794 = 1.372+1,200/ 162,482	1.3727= 1.372+1,200/ 1,624,815
IDF (b)	1.000	1.000	1.000	1.000
GCF (c)	1.000	1.000	1.000	1.000
AV (d)	0.675	0.675	0.675	0.675
ARF (e)	1.592	1.592	1.592	1.592
Market Average Premium PMPM (f)	\$354.38		\$354.38	
RA Transfer PMPM (f) x [Carrier (a x b x c) / Market (a x b x c)] ⁷ – Carrier (b x c x d x e) / Market (b x c x d x e) ⁸]	\$0.00		\$1.72	
Total RA Transfer Increase	\$278,808			

5 Hiemenz, K., Siegel, J., & Moody, S. (December 2015). Aligning Payer-Provider Incentives to Improve Coding and ACA Risk Transfer Payments. Milliman healthcare reform briefing paper. Accessed January 12, 2016, at http://us.milliman.com/uploadedFiles/insight/2015/2143HDP_20151223.pdf.

6 CMS, Summary Report on Transitional Reinsurance Payments and Permanent Risk Adjustment Transfers for the 2014 Benefit Year, revised September 17, 2015..

7 The market values are calculated as a product of the average market values rather than the average of the products, due to the unavailability of detailed values for all carriers in each market.

8 Ibid.

Carrier market share versus transfer amount potential

First and foremost, we considered the effect that a carrier’s market share has on the overall potential for risk adjustment coding completeness efforts to have an impact on a carrier’s risk adjustment transfer payment. The larger a carrier is relative to the overall market, the more closely the overall market experience will mimic the carrier’s own, and the less potential there is to improve one’s position with coding completeness efforts.

The lower the carrier’s market share, the greater the potential risk adjustment transfer amount because the transfer amount is calculated relative to the market average risk score and rating factors. Carriers with a large portion of the market will receive or pay relatively little because their risk score will closely mirror the market average.

Continuing with our example from above, and using the CMS report on risk adjustment transfers for the 2014 benefit year,⁹ we know that the average Colorado individual market parameters for 2014 were as follows:

- Market premium \$354.38 PMPM
- Market PLRS 1.372
- Market ARF 1.592
- Market AV 0.675
- Market size 1,624,815 billable member months

Suppose that a hypothetical carrier mimics the overall individual 2014 Colorado market with respect to PLRS, ARF, and AV values, and then has the ability to increase its own PLRS by 100 risk score points (as described above). How much would this increase the carrier’s overall risk adjustment transfer payment?

FIGURE 2: COLORADO 2014 INDIVIDUAL MARKET: MARKET SHARE IMPACT FROM CODING IMPROVEMENT

MARKET SHARE	RA TRANSFER INCREASE (PMPM)	RA TRANSFER INCREASE (TOTAL DOLLARS)
1%	\$18.88	\$306,689
5%	\$3.62	\$294,297
10%	\$1.72	\$278,808
20%	\$0.76	\$247,829
30%	\$0.44	\$216,851
40%	\$0.29	\$185,872
50%	\$0.19	\$154,893
60%	\$0.13	\$123,915
70%	\$0.08	\$92,936
80%	\$0.05	\$61,957
90%	\$0.02	\$30,979
100%	\$0	\$0

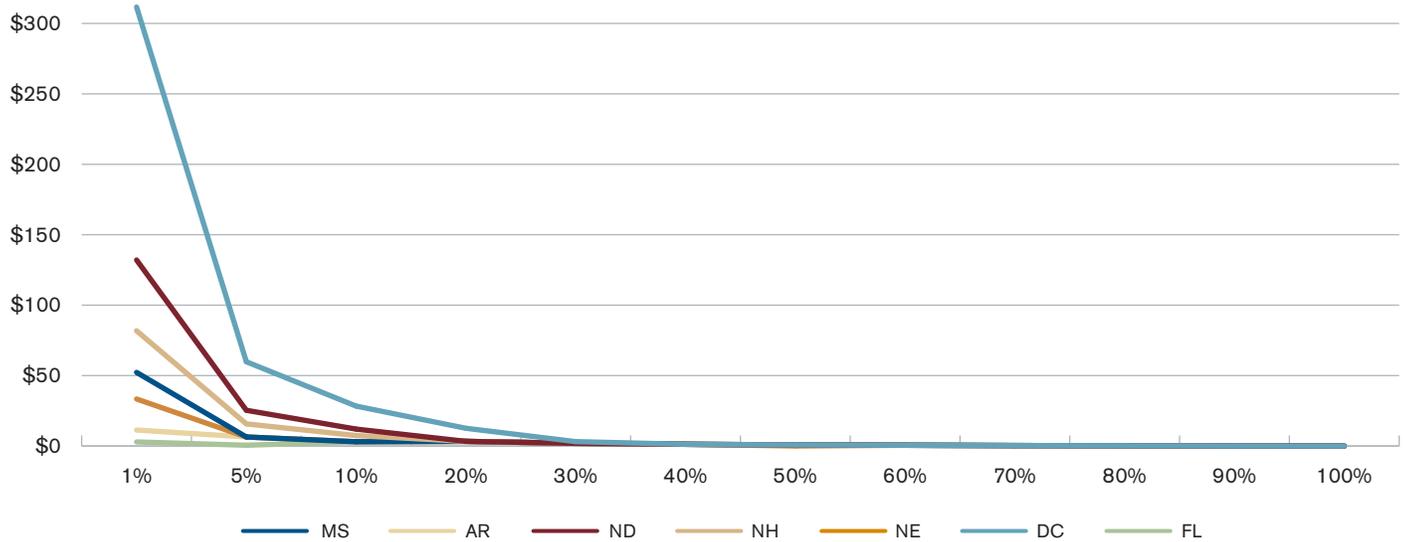
Hopefully, the shape of the result in Figure 2 is rather intuitive—as the market share increases, the impact of a fixed risk score improvement diminishes. Moreover, a fixed increase in risk score will be easier to achieve for a larger carrier because a greater number of members means a greater potential for undiagnosed conditions (and if Carrier B is 10 times the size of Carrier A, perhaps it should be targeting a total coding improvement goal commensurate with its size advantage). It may seem that, while the PMPM transfer increase decreases, the overall payment appears to be about the same. It is true that a larger carrier would receive this smaller PMPM amount for a greater number of members; however, even the total amount (market share times PMPM transfer increase) decreases as market share increases.

⁹ CMS, Summary Report on Transitional Reinsurance Payments and Permanent Risk Adjustment Transfers for the 2014 Benefit Year, revised September 17, 2015.

¹⁰ Impact of improvements based on carrier risk score increase of 100 HCC points.

Of course, Colorado is just one of many ACA markets. If we expand our view to all of the 2014 individual markets,¹¹ what impact would a fixed (100 point) increase in a carrier’s risk score have on its transfer payment/receipt, for various levels of market share? Figures 3 and 4 present these results for selected states in the individual and small group markets, respectively.¹²

FIGURE 3: CHANGE IN RISK ADJUSTMENT TRANSFER PMPM VERSUS CARRIER MARKET SHARE INDIVIDUAL MARKET



Each individual market has a similar slope to it. The most notable thing in the graph above is that the smaller markets exhibit a greater impact (at any market share) than larger markets; for instance, a fixed risk score improvement of 100 points has a \$262.58 PMPM benefit in Wyoming (with 1% market share), but only a \$1.85 PMPM benefit in California (with 1% market share).

This distinction makes sense upon inspection: The Washington, D.C., individual market in 2014 comprised approximately 91,000 member-months or 7,600 full-year members. A carrier with 1% of the overall market would have about 76 members, and so an increase of 100 risk score points across that small population is exceptionally meaningful; our fictional carrier has increased the measured risk of its population by quite a lot. Conversely, a carrier with 1% of the Florida market would have about 7,700 full-year members, and finding an additional 100 risk score points in a population of this size would be much easier. (Of course, the task of reaching out to 7,700 members would be an order of magnitude more difficult than reaching out to 76 members).

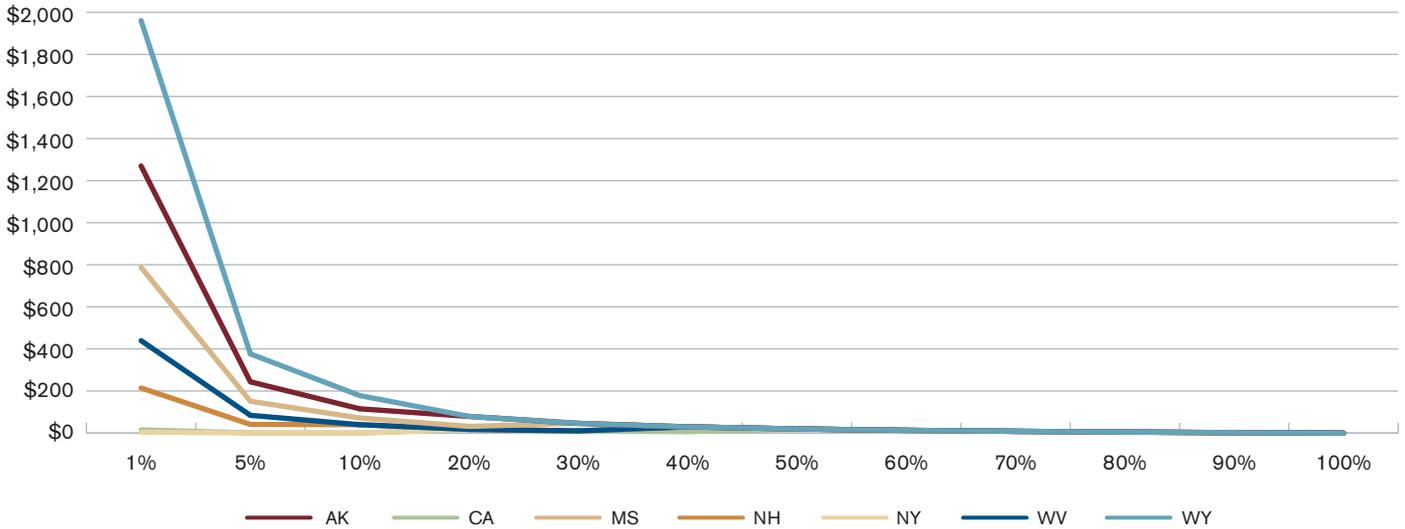
A similar result is observed when comparing the transfer difference between the individual and small group markets. Given that the size of the small group ACA markets across the country ranged from approximately 26,000 billable member months to just over 8 million billable member months, and the size of the individual ACA markets ranged from approximately 90,000 to 19 million billable member months, the small group market experienced a wider range of changes in PMPM transfer amounts from the additional 100 points, as can be observed by looking at the scale of the vertical axis in the chart above and below.¹³ The tables of values that correspond to both charts can be found in the Appendix.

11 Note that we excluded Vermont from all charts in this report because its individual and small group marketplaces have been merged.

12 Impact of improvements based on carrier risk score increase of 100 HCC points.

13 Impact of improvements based on carrier risk score increase of 100 HCC points.

FIGURE 4: CHANGE IN RISK ADJUSTMENT TRANSFER PMPM VERSUS CARRIER MARKET SHARE SMALL GROUP MARKET



This suggests that for a health carrier looking to invest resources into coding optimization, it is critical to consider both the current market share and overall market size. A carrier’s market share inversely affects the potential increase in the risk adjustment transfer amount, and thus the carriers with the lowest market share gain the most from coding optimization. Carriers operating in smaller-sized markets (determined by the billable membership) also stand to potentially gain greater return on their investment. Therefore, prioritizing the coding optimization between individual and small group lines of business could be a viable strategy.

Market size versus transfer amount potential

As we alluded to in the prior section, the overall market size in which a carrier is operating has significant implications on the value that can be derived from coding optimization. The larger the market size (in absolute terms), the smaller the risk adjustment transfer potential for a carrier on a PMPM basis. Holding a carrier’s market share (such as 10%) as fixed, increasing the size of the overall market increases the number of members with conditions (both in the market and for the carrier), which lowers the impact that a fixed coding improvement (100 points in our examples) can have on one’s ultimate transfer.

However, the aggregate transfer amount potential (PMPM times carrier member months) is greater for larger markets, and as a result, the transfer amount is less influenced by the market size and much more influenced by the market share.

Figure 5 below shows the relationship (for selected representative states) between 2014 market size (as defined by the number of billable member months in the market), market share (10%, 50%, 90%), and the increase in the risk adjustment transfer amount (both PMPM and in total) for a carrier that could be gained from identifying 100 additional HCC points. Although the difference in transfer benefit on a PMPM level (columns A through C) decreases dramatically as the size of the market increases—due to the smaller impact of 100 HCC points in a larger market—once the carrier’s actual membership is taken into account, there is little variation in the total transfer amount by market size (columns D through F).

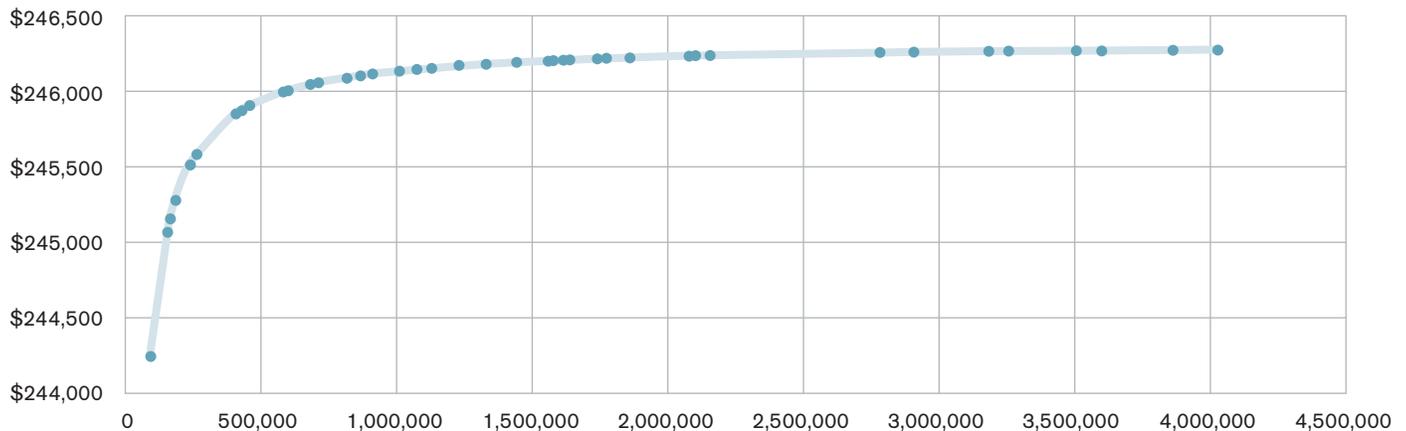
FIGURE 5: INDIVIDUAL MARKET: MARKET SIZE AND MARKET SHARE

STATE	MARKET SIZE*	PMPM TRANSFER CHANGE			TOTAL TRANSFER CHANGE		
		MARKET SHARE			MARKET SHARE		
		10% (A)	50% (B)	90% (C)	10% (D)	50% (E)	90% (F)
DC	90,739	\$26.92	\$2.99	\$0.33	\$244,251	\$135,695	\$27,139
ND	237,030	\$10.36	\$1.15	\$0.13	\$245,531	\$136,406	\$27,281
NM	417,315	\$5.89	\$0.65	\$0.07	\$245,876	\$136,598	\$27,320
IA	681,420	\$3.61	\$0.40	\$0.04	\$246,053	\$136,696	\$27,339
ID	899,436	\$2.74	\$0.30	\$0.03	\$246,120	\$136,733	\$27,347
MD	1,219,565	\$2.02	\$0.22	\$0.02	\$246,176	\$136,764	\$27,353
TN	1,606,013	\$1.53	\$0.17	\$0.02	\$246,213	\$136,785	\$27,357
AR	2,080,321	\$1.18	\$0.13	\$0.01	\$246,240	\$136,800	\$27,360
GA	3,172,366	\$0.78	\$0.09	\$0.01	\$246,272	\$136,818	\$27,364
PA	4,018,929	\$0.61	\$0.07	\$0.01	\$246,284	\$136,825	\$27,365

*Billable Member Months

At the same time, Figure 6 (which compared Figure 5’s total transfer change for a 10% market share (column D) against market size for all states in the 2014 individual market) shows that the aggregate 2014 individual market transfer increase increases only modestly as the market size increases, with very little improvement to be gained after a certain point.

FIGURE 6: TOTAL TRANSFER CHANGE, 2014 INDIVIDUAL MARKET, 10% MARKET SHARE



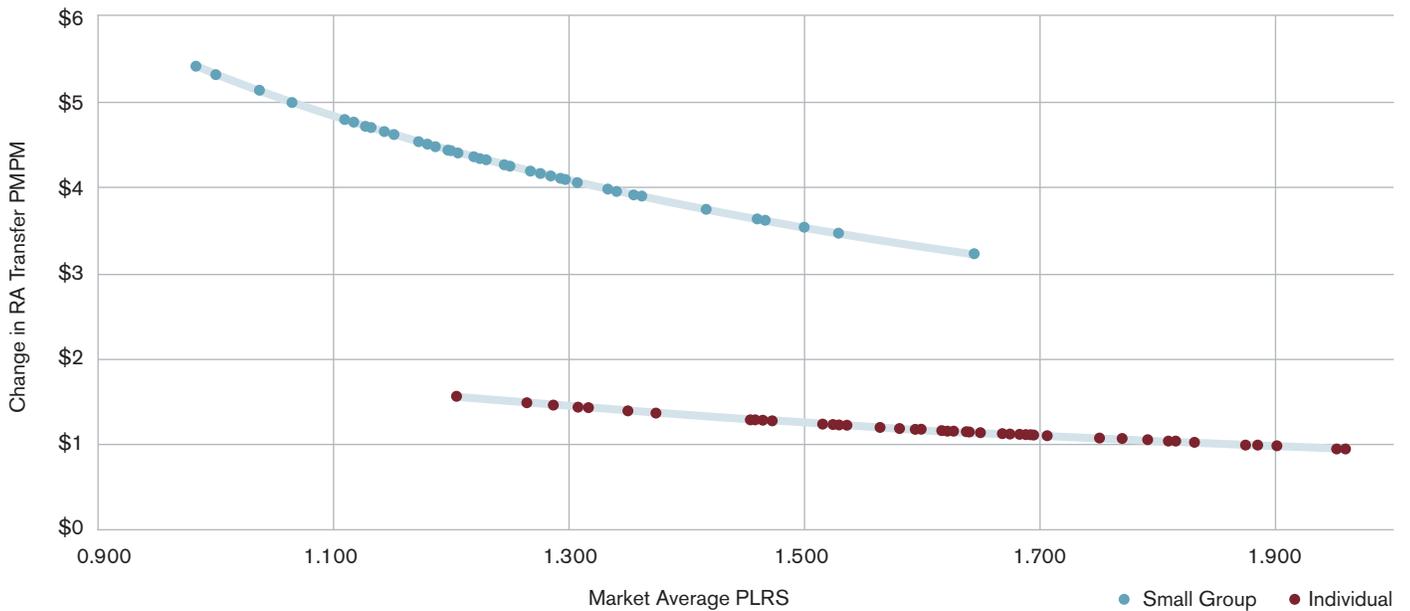
Market average risk score versus risk score versus transfer amount potential

As shown above, the market size has a meaningful impact on the risk adjustment transfer amount (PMPM) due to the number of overall conditions present in the market (larger markets have more total conditions). One would, therefore, assume that, for a given fixed market size, a higher market level risk score (PLRS) would correlate with a lower benefit to coding improvement efforts.

This is borne out in Figure 7, showing 2014 market values for PLRS while holding the market size fixed. The larger the market average risk score, the smaller the impact of the additional HCC coefficient(s) on transfer amounts. Similar to the market share and the market size, this relationship has implications by state, particularly for carriers operating in multiple states.

Holding the market size and market average premiums as constant, this chart shows the relationship between the change in the risk adjustment transfer amount that results from a fixed increase (100 HCC points) in the carrier's average plan liability risk score for a carrier with 10% market share as the market level PLRS changes. Each dot in the chart represents a market's 2014 PLRS and the corresponding change in the transfer amount. The intent here is to isolate the impact of the market average risk score on the transfer change. There is also a steeper slope for the small group market, as compared to the individual market, for a fixed increase in plan's average risk score.

FIGURE 7: CHANGE IN PMPM RISK ADJUSTMENT TRANSFER VERSUS MARKET PLRS, 2014



Carrier average risk score versus transfer amount potential

The risk adjustment transfer benefit to be gained from identifying an additional HCC increases as a carrier's average risk score, relative to the market risk score, decreases; in other words, if your plan's enrollees are already significantly more morbid than the overall market, there is less additional benefit by producing further evidence of morbidity. If a carrier has a higher starting PLRS, then a fixed 100-point increase in risk score yields a lower percentage increase in the carrier's PLRS. This is another representation of the law of diminishing coding improvement returns discussed earlier.

Thus, the addition of an HCC has a moderately greater impact on a carrier with a lower starting risk score relative to the market average score. Figure 8 shows that the results vary by market share as well (as discussed above), where carriers with lower market share experience a greater change in the transfer amount from recording an additional 100 HCC points.

FIGURE 8: COLORADO 2014 INDIVIDUAL MARKET: PMPM TRANSFER PAYMENT IMPACT, CARRIER RISK SCORE AND MARKET SHARE

CARRIER PLRS/ MARKET PLRS	MARKET SHARE %										
	1%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%
200%	\$18.68	\$3.43	\$1.53	\$0.57	\$0.25	\$0.10	\$0.00	N/A ¹⁴	N/A	N/A	N/A
180%	\$18.72	\$3.47	\$1.56	\$0.61	\$0.29	\$0.13	\$0.04	N/A	N/A	N/A	N/A
160%	\$18.76	\$3.51	\$1.60	\$0.65	\$0.33	\$0.17	\$0.08	\$0.01	N/A	N/A	N/A
140%	\$18.80	\$3.55	\$1.64	\$0.69	\$0.37	\$0.21	\$0.11	\$0.05	\$0.01	N/A	N/A
120%	\$18.84	\$3.58	\$1.68	\$0.72	\$0.41	\$0.25	\$0.15	\$0.09	\$0.04	\$0.01	N/A
100%	\$18.88	\$3.62	\$1.72	\$0.76	\$0.44	\$0.29	\$0.19	\$0.13	\$0.08	\$0.05	\$0.02
90%	\$18.89	\$3.64	\$1.74	\$0.78	\$0.46	\$0.31	\$0.21	\$0.15	\$0.10	\$0.07	\$0.04
80%	\$18.91	\$3.66	\$1.75	\$0.80	\$0.48	\$0.32	\$0.23	\$0.17	\$0.12	\$0.09	\$0.06
65%	\$18.94	\$3.69	\$1.78	\$0.83	\$0.51	\$0.35	\$0.26	\$0.19	\$0.15	\$0.11	\$0.09
50%	\$18.97	\$3.72	\$1.81	\$0.86	\$0.54	\$0.38	\$0.29	\$0.22	\$0.18	\$0.14	\$0.12

Note that the relationship between a carrier's relative PLRS and the change in transfer is approximately linear: For 1% difference between the two risk scores, there is a fixed transfer amount PMPM. The relative impact is more material for carriers with a market share of 10% or greater. For instance, the difference in the transfer change for a carrier with 30% market share ranges from \$0.54 PMPM to \$0.25 PMPM (a 50% decrease) for corresponding plan risk scores ranging between 50% and 200% of market average plan liability risk score.

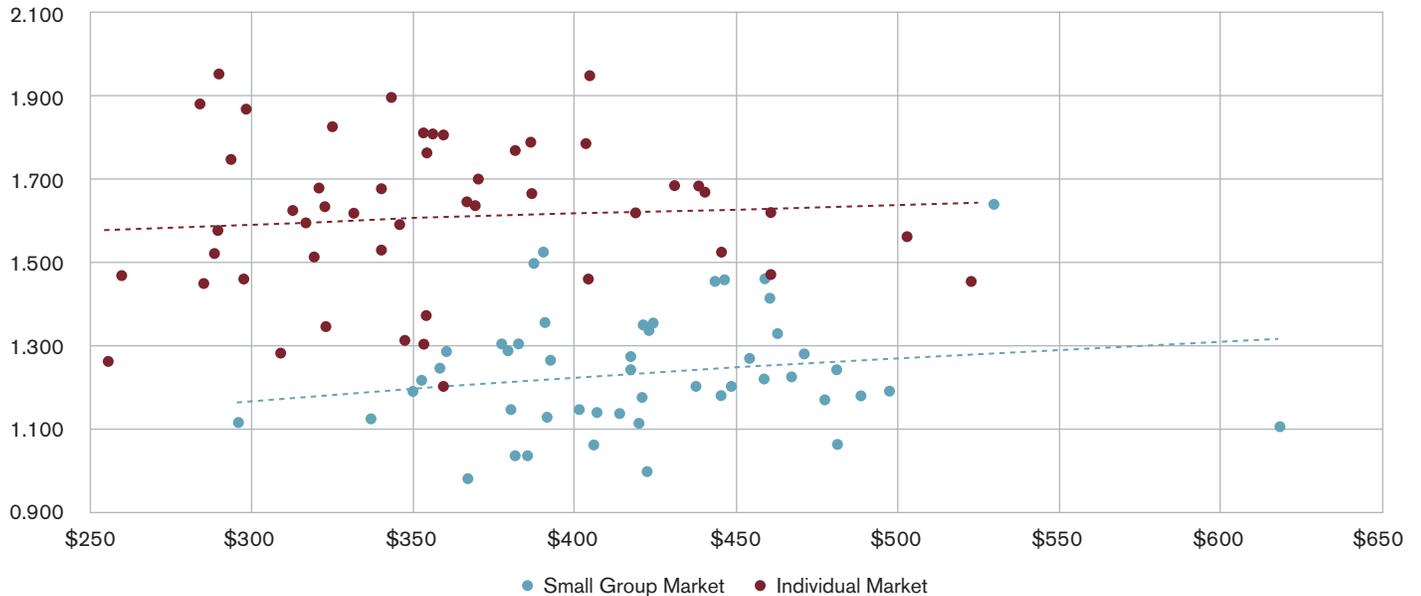
Impact of market premium, ARF, AV, GCF, and IDF on change in transfer amount

In the context of change in the risk adjustment transfer due to improved coding, the addition of HCC coefficient(s) affects the PLRS only. Assuming no other changes in the plan membership, the average AV and allowable rating factor (ARF) will not differ and thus have no effect on the *change* in the transfer. The induced demand factor (IDF) and geographic cost factor (GCF) both act as scalars to the plan's average risk score and proportionally amplify the change in PLRS in the risk adjustment transfer calculation. Because risk adjustment transfer amounts are calculated by metal level and rating area, a carrier should prioritize coding improvement efforts for members in areas with higher-cost geographic areas (not just a carrier's specific rating area factors, but statewide calculated GCFs) and for members enrolled in higher metal level products (which are assigned higher IDF values) in order to provide the best cost-benefit ratio. Because the market average premium level has a scaling effect on the ultimate transfer amounts, the potential gain from adding additional HCCs to a carrier population is greater in states with a higher market average premium. One might think that the market average premium would be highly correlated with the market's average plan liability risk score (and thus that these two factors would contribute to coding improvement benefits); after all, the former is a prospective estimate of the level of market risk while the latter is a retrospective estimate of the same.

14 For a carrier with greater than 50% market share, it is not possible to have a plan risk score 200% of market average score. The other figure cells with N/A values represent similarly impossible situations.

However, on a state-by-state basis, the correlation between these two values is only 17% (small group market) and 4% (individual market), as shown in Figure 9. This is due to a number of factors, including premium rating limitations within a market (age, area, tobacco status, metallic levels), state-specific market factors such as differences in utilization and cost-of-care patterns, limitations of the HHS risk adjuster as a predictor of health, and, of course, the huge degree of uncertainty that was present when carriers set 2014 premium rates (especially in the individual market).

FIGURE 9: MARKET AVERAGE PREMIUM VERSUS MARKET AVERAGE PLRS



Diminishing returns in coding improvement efforts

Earlier in the report, we noted that, although the impact of coding improvement efforts is always monotone, it is not a linear impact (that is, a coding improvement of 200 risk score points will not produce twice the benefit of a coding improvement of 100 risk score points).

Let us once again return to our fictional Colorado carrier, with a 10% share of the 2014 individual ACA marketplace, where we examined the impact of a coding improvement equal to 100 risk score points. Figure 10 shows the diminishing returns of finding an additional 100 risk score points upon that carrier's overall transfer receipt.

FIGURE 10: COLORADO 2014 INDIVIDUAL MARKET, 10% MARKET SHARE: DIMINISHING IMPACT FROM ADDITIONAL CODING IMPROVEMENT

IMPROVEMENT	TOTAL IMPACT	MARGINAL IMPACT	MARGINAL IMPACT (RELATIVE TO FIRST 100)
First 100	\$278,808	\$278,808	100.0%
Second 100	\$557,316	\$278,508	99.9%
Third 100	\$835,525	\$278,209	99.8%
Fourth 100	\$1,113,435	\$277,910	99.7%
Fifth 100	\$1,391,046	\$277,611	99.6%
—	—	—	—
Tenth 100	\$2,774,644	\$276,127	99.0%
25th 100	\$6,881,345	\$271,743	97.5%
50th 100	\$13,582,333	\$264,666	94.9%
100th 100	\$26,470,878	\$251,316	90.1%

This does not mean that our fictional carrier should stop at 100 risk score points' improvement. As noted, the gain is still monotone, and there is still considerable benefit from coding improvement (even the 100th iteration of improvement is still worth approximately 90% of the benefit of the first iteration, and in this example, our fictional carrier would have to complete the monumental task of raising its PLRS from 1.372 to 2.111 in order to find 10,000 risk score points). Particularly for large carriers, there may be considerably more than 100 risk score points "available" to be found in their populations, and although overall expectations should be tempered, the benefit is still meaningful.

Practical considerations

Coding improvement efforts in the ACA marketplace can be somewhat represented by the infamous prisoners' dilemma—the entire market (and every carrier in the market) would collectively save money by not expending resources on the coding vendors, so long as none of the market's other carriers engaged in these efforts. However, each individual carrier has its own incentives and can benefit the most if it is the only market entrant to improve scores. On the other hand, carriers understand that others in the market are engaging in coding efforts, and therefore they must participate as well in order to not fall further behind the market. Of course, whether carriers engage or do not engage in coding improvement efforts does not alter the overall budget neutrality of the risk adjustment program, which necessitates that there still be carriers with above- and below-market average uncompensated risk.

As a result, most rational carriers will invest in coding improvement, as the risk of not doing so is too great to absorb. Health plans need information to allocate and prioritize the coding improvement efforts most effectively as well as to be able to evaluate various cost proposals from multiple coding improvement vendors (or conducting one's own efforts in house).

In the near term, a carrier cannot influence anything in the risk transfer calculation except for its plans' average risk scores, through the identification of additional HCCs that lead to an increase in member risk scores. Over the longer term, plans can adopt strategies involving different marketing efforts, which could influence factors other than the PLRS, but these represent the topic of a different analysis.

When considering a near-term coding improvement strategy, we recommend that carriers approach the decision-making process by considering the following:

1. When working with a particular coding vendor (or in house) to develop a coding improvement effort, it is important to be realistic regarding the gain that should be expected in a carrier's risk score. There are many ways to estimate the potential for coding improvement (of course, these often come in a package provided by the vendor and could be overly optimistic).

Carriers with prior risk adjustment experience (for instance, in the Medicare world) might have less to gain from coding improvement efforts simply because that experience could already be baked into their current risk scores (noting that this would require communication efforts between a carrier's Medicare team and commercial team). New entrants to healthcare insurance (and those without risk adjustment experience) could potentially get greater bang for their buck with coding improvement because they have more ground to make up in this area.

Simply finding a potential diabetic, for example, is not enough to improve one's risk score, either. If a member is not willing to take appropriate action or to engage with a provider, then the carrier's risk score will not be affected. Moreover, a potential diabetic is not necessarily an actual diabetic, and an actual diabetic is not necessarily a diabetic with the "right" diagnosis codes.

2. Once your own potential for coding improvement has been estimated, evaluate the potential for transfer formula benefit by examining the (1) markets that you operate in (individual, small group), (2) the size of the overall market(s), (3) your market share, (4) market average risk score(s), and (5) your plans' current risk score(s) level.
 - A carrier's market share inversely affects the potential increase in the risk adjustment transfer amount, and so carriers with the lowest market share gain the most from the coding optimization.
 - Carriers operating in smaller-sized ACA markets stand to gain a potentially greater return on investment on a PMPM basis, so prioritizing the coding optimization between individual and small group lines of business could be a viable strategy. However, carriers in smaller markets (with similar market share) have smaller populations themselves, and so the ability to increase one's own risk score by a given amount (100 HCC points in this report) is less certain.
 - The higher the market average risk score, the smaller the impact of additional HCC(s) coefficient(s) on ultimate transfer amount. Similar to the market share and the market size, this relationship has implications by state, particularly for carriers operating in multiple states.

- The risk adjustment transfer benefit to be gained from identifying an additional HCC increases as a carrier’s average risk score, relative to the market risk score, decreases; in other words, if your plan’s enrollees are already significantly more morbid than the overall market, there is less additional benefit by producing further evidence of morbidity. Thus, the addition of an HCC has a moderately greater impact on a carrier with a lower starting risk score relative to the market average score.
 - Remember that risk adjustment transfer amounts are calculated by metal level and rating area, and so prioritizing the coding improvements for members in areas with higher-cost geographic areas (not just carrier’s specific rating area factors, but statewide calculated GCFs) and for members enrolled in higher metal level products (which are assigned higher IDF values) will give a carrier the greatest bang for the buck.
3. Coding improvement efforts also come with a cost in terms of both dollars and time (or opportunity cost). If the estimated gain from coding improvement efforts doesn’t outweigh these costs, then perhaps a carrier’s limited financial resources should be spent elsewhere. For instance, if a carrier controls an entire market (or nearly all of it), then it is likely that the costs of coding improvement will dwarf the benefits.

Of course, coding improvement efforts can have other non-risk-adjustment benefits to a commercial carrier, including the bolstering of disease management program efforts, member outreach and engagement, and provider relations.

4. In order to help estimate the value of coding improvement efforts, one should estimate an expected transfer increase amount and use it as a benchmark to compare against the cost of doing so on a consistent basis (either total cost or PMPM). For example, consider the illustrative example presented in Figure 11. For a carrier operating in the Alaskan individual market with a 20% market share and with a starting average risk score of 1.35, the anticipated risk adjustment transfer without any coding improvement would be a \$68.56 PMPM payment into the program. The transfer amount post coding improvement (assuming 100 HCC points can be found) is a smaller payment of \$57.99 PMPM, and the transfer amount without coding improvement for the carrier but assuming some optimization in the market (despite the likely addition of healthy new entrants) would result in a larger \$70.76 PMPM payment. The cost of coding improvement services can then be compared to these figures. If the net return from the scenario with coding optimization outweighs the net return without optimization, that should help in guiding the decision. In the example below, the cost of vendor services outweighs the financial improvement potential.

FIGURE 11: RISK ADJUSTMENT TRANSFER IMPACT SCENARIOS

ALASKA INDIVIDUAL MARKET	PRE CODING IMPROVEMENT		POST CODING IMPROVEMENT		WITHOUT CODING IMPROVEMENT	
	CARRIER	MARKET	CARRIER	MARKET	CARRIER	MARKET
Membership (Billable Member Months)	30,081	150,406	30,081	150,406	30,081	150,406
Market Share	20%	100%	20%	100%	20%	100%
PLRS (a)	1.35	1.563	1.3899 = 1.35 + 1,200/30,081	1.571 = 1.39*0.2 + (1.563 - 1.35*0.2)	1.35	1.571
IDF (b)	1.000	1.000	1.000	1.000	1.000	1.000
GCF (c)	1.000	1.000	1.000	1.000	1.000	1.000
AV (d)	0.678	0.678	0.678	0.678	0.678	0.678
ARF (e)	1.616	1.616	1.616	1.616	1.616	1.616
Market Average Premium PMPM (f)	\$503.08		\$503.08		\$503.08	
RA Transfer PMPM (f) x [Carrier (a x b x c)/Market (a x b x c) - Carrier (b x c x d x e)/Market (b x c x d x e)]	-\$68.56		-\$57.99		-\$70.76	
Total RA Transfer Change	\$317,898 = (-\$57.99 - -\$68.56)*30,081				-\$66,382 = (-\$70.76 - -\$68.56)*30,081	
Total RA Transfer Change	\$384,280 = \$317,898 - (-\$66,382)					
Vendor Cost	\$500,000					
Net Return	-\$115,720 = \$384,280 - \$500,000					

APPENDIX

Change In Risk Adjustment Transfer Amount from Additional 100 HCC Coefficient Points for Carrier's Membership by Market Share % Individual 2014 ACA Market by State

% MARKET SHARE																	
STATE	MARKET SIZE (BILLABLE MEMBER MONTHS)	AVERAGE PREMIUM	AVERAGE PLRS	AVERAGE ARF	AVERAGE AV	1%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
AK	150,406	\$503.08	1.563	1.616	0.678	\$252.94	\$48.54	\$22.99	\$10.22	\$5.96	\$3.83	\$2.55	\$1.70	\$1.09	\$0.64	\$0.28	\$0.00
AL	1,852,363	\$312.71	1.626	1.531	0.709	\$12.33	\$2.37	\$1.12	\$0.50	\$0.29	\$0.19	\$0.12	\$0.08	\$0.05	\$0.03	\$0.01	\$0.00
AR	2,080,321	\$359.79	1.809	1.518	0.701	\$11.35	\$2.18	\$1.03	\$0.46	\$0.27	\$0.17	\$0.11	\$0.08	\$0.05	\$0.03	\$0.01	\$0.00
AZ	1,433,005	\$293.81	1.750	1.549	0.731	\$13.91	\$2.67	\$1.26	\$0.56	\$0.33	\$0.21	\$0.14	\$0.09	\$0.06	\$0.04	\$0.02	\$0.00
CA	19,207,689	\$359.45	1.203	1.541	0.697	\$1.85	\$0.35	\$0.17	\$0.07	\$0.04	\$0.03	\$0.02	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00
CO	1,624,815	\$354.38	1.372	1.592	0.675	\$18.88	\$3.62	\$1.72	\$0.76	\$0.44	\$0.29	\$0.19	\$0.13	\$0.08	\$0.05	\$0.02	\$0.00
CT	1,124,052	\$461.23	1.625	1.692	0.705	\$29.98	\$5.75	\$2.73	\$1.21	\$0.71	\$0.45	\$0.30	\$0.20	\$0.13	\$0.08	\$0.03	\$0.00
DC	90,739	\$309.01	1.285	1.077	0.745	\$311.64	\$59.81	\$28.33	\$12.59	\$7.34	\$4.72	\$3.15	\$2.10	\$1.35	\$0.79	\$0.35	\$0.00
DE	181,266	\$403.67	1.790	1.632	0.735	\$147.25	\$28.26	\$13.39	\$5.95	\$3.47	\$2.23	\$1.49	\$0.99	\$0.64	\$0.37	\$0.17	\$0.00
FL	9,216,554	\$369.36	1.639	1.674	0.718	\$2.90	\$0.56	\$0.26	\$0.12	\$0.07	\$0.04	\$0.03	\$0.02	\$0.01	\$0.01	\$0.00	\$0.00
GA	3,172,366	\$346.24	1.594	1.579	0.722	\$8.13	\$1.56	\$0.74	\$0.33	\$0.19	\$0.12	\$0.08	\$0.05	\$0.04	\$0.02	\$0.01	\$0.00
HI	233,750	\$289.64	1.579	1.635	0.753	\$92.92	\$17.83	\$8.45	\$3.75	\$2.19	\$1.41	\$0.94	\$0.63	\$0.40	\$0.23	\$0.10	\$0.00
IA	681,420	\$340.44	1.680	1.589	0.704	\$35.29	\$6.77	\$3.21	\$1.43	\$0.83	\$0.53	\$0.36	\$0.24	\$0.15	\$0.09	\$0.04	\$0.00
ID	899,436	\$285.27	1.453	1.541	0.701	\$25.91	\$4.97	\$2.36	\$1.05	\$0.61	\$0.39	\$0.26	\$0.17	\$0.11	\$0.07	\$0.03	\$0.00
IL	3,248,913	\$317.12	1.597	1.622	0.699	\$7.26	\$1.39	\$0.66	\$0.29	\$0.17	\$0.11	\$0.07	\$0.05	\$0.03	\$0.02	\$0.01	\$0.00
IN	1,319,303	\$438.28	1.686	1.706	0.678	\$23.40	\$4.49	\$2.13	\$0.95	\$0.55	\$0.35	\$0.24	\$0.16	\$0.10	\$0.06	\$0.03	\$0.00
KS	682,387	\$298.53	1.874	1.603	0.712	\$27.71	\$5.32	\$2.52	\$1.12	\$0.65	\$0.42	\$0.28	\$0.19	\$0.12	\$0.07	\$0.03	\$0.00
KY	856,379	\$325.36	1.830	1.683	0.758	\$24.65	\$4.73	\$2.24	\$1.00	\$0.58	\$0.37	\$0.25	\$0.17	\$0.11	\$0.06	\$0.03	\$0.00
LA	1,065,879	\$386.37	1.791	1.585	0.712	\$24.03	\$4.61	\$2.18	\$0.97	\$0.57	\$0.36	\$0.24	\$0.16	\$0.10	\$0.06	\$0.03	\$0.00
MD	1,219,565	\$288.55	1.522	1.572	0.717	\$18.46	\$3.54	\$1.68	\$0.75	\$0.43	\$0.28	\$0.19	\$0.12	\$0.08	\$0.05	\$0.02	\$0.00
ME	449,500	\$445.68	1.527	1.778	0.690	\$77.00	\$14.78	\$7.00	\$3.11	\$1.81	\$1.17	\$0.78	\$0.52	\$0.33	\$0.19	\$0.09	\$0.00
MI	2,898,930	\$356.50	1.813	1.681	0.707	\$8.06	\$1.55	\$0.73	\$0.33	\$0.19	\$0.12	\$0.08	\$0.05	\$0.03	\$0.02	\$0.01	\$0.00
MN	2,772,924	\$255.66	1.263	1.602	0.729	\$8.67	\$1.66	\$0.79	\$0.35	\$0.20	\$0.13	\$0.09	\$0.06	\$0.04	\$0.02	\$0.01	\$0.00
MO	1,566,594	\$353.27	1.815	1.635	0.699	\$14.75	\$2.83	\$1.34	\$0.60	\$0.35	\$0.22	\$0.15	\$0.10	\$0.06	\$0.04	\$0.02	\$0.00
MS	586,998	\$419.17	1.621	1.612	0.723	\$52.27	\$10.03	\$4.75	\$2.11	\$1.23	\$0.79	\$0.53	\$0.35	\$0.23	\$0.13	\$0.06	\$0.00
MT	677,450	\$322.99	1.347	1.656	0.674	\$41.99	\$8.06	\$3.82	\$1.70	\$0.99	\$0.64	\$0.42	\$0.28	\$0.18	\$0.11	\$0.05	\$0.00
NC	3,590,906	\$387.21	1.668	1.612	0.702	\$7.68	\$1.47	\$0.70	\$0.31	\$0.18	\$0.12	\$0.08	\$0.05	\$0.03	\$0.02	\$0.01	\$0.00
ND	237,030	\$347.84	1.315	1.467	0.727	\$132.07	\$25.35	\$12.01	\$5.34	\$3.11	\$2.00	\$1.33	\$0.89	\$0.57	\$0.33	\$0.15	\$0.00
NE	700,447	\$322.53	1.637	1.557	0.699	\$33.38	\$6.41	\$3.03	\$1.35	\$0.79	\$0.51	\$0.34	\$0.22	\$0.14	\$0.08	\$0.04	\$0.00
NH	401,314	\$404.51	1.461	1.731	0.686	\$81.79	\$15.70	\$7.44	\$3.30	\$1.93	\$1.24	\$0.83	\$0.55	\$0.35	\$0.21	\$0.09	\$0.00
NJ	2,091,355	\$460.36	1.472	1.624	0.707	\$17.76	\$3.41	\$1.61	\$0.72	\$0.42	\$0.27	\$0.18	\$0.12	\$0.08	\$0.04	\$0.02	\$0.00
NM	417,315	\$319.51	1.514	1.665	0.702	\$59.96	\$11.51	\$5.45	\$2.42	\$1.41	\$0.91	\$0.61	\$0.40	\$0.26	\$0.15	\$0.07	\$0.00
NV	576,176	\$354.44	1.769	1.615	0.722	\$41.26	\$7.92	\$3.75	\$1.67	\$0.97	\$0.63	\$0.42	\$0.28	\$0.18	\$0.10	\$0.05	\$0.00
NY	3,853,611	\$430.97	1.691	0.991	0.739	\$7.86	\$1.51	\$0.71	\$0.32	\$0.19	\$0.12	\$0.08	\$0.05	\$0.03	\$0.02	\$0.01	\$0.00
OH	1,765,093	\$381.98	1.770	1.701	0.698	\$14.52	\$2.79	\$1.32	\$0.59	\$0.34	\$0.22	\$0.15	\$0.10	\$0.06	\$0.04	\$0.02	\$0.00
OK	806,647	\$284.42	1.885	1.616	0.691	\$22.20	\$4.26	\$2.02	\$0.90	\$0.52	\$0.34	\$0.22	\$0.15	\$0.10	\$0.06	\$0.02	\$0.00
OR	1,732,070	\$297.79	1.462	1.629	0.694	\$13.96	\$2.68	\$1.27	\$0.56	\$0.33	\$0.21	\$0.14	\$0.09	\$0.06	\$0.04	\$0.02	\$0.00
PA	4,018,929	\$343.40	1.900	1.717	0.734	\$5.34	\$1.03	\$0.49	\$0.22	\$0.13	\$0.08	\$0.05	\$0.04	\$0.02	\$0.01	\$0.01	\$0.00

% MARKET SHARE CONTINUED

STATE	MARKET SIZE (BILLABLE MEMBER MONTHS)	AVERAGE PREMIUM	AVERAGE PLRS	AVERAGE ARF	AVERAGE AV	1%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
RI	414,813	\$366.74	1.648	1.667	0.700	\$63.62	\$12.21	\$5.78	\$2.57	\$1.50	\$0.96	\$0.64	\$0.43	\$0.28	\$0.16	\$0.07	\$0.00
SC	1,064,597	\$370.58	1.704	1.684	0.702	\$24.25	\$4.65	\$2.20	\$0.98	\$0.57	\$0.37	\$0.24	\$0.16	\$0.10	\$0.06	\$0.03	\$0.00
SD	257,642	\$332.16	1.618	1.469	0.702	\$94.39	\$18.12	\$8.58	\$3.81	\$2.22	\$1.43	\$0.95	\$0.64	\$0.41	\$0.24	\$0.11	\$0.00
TN	1,606,013	\$290.15	1.958	1.674	0.702	\$10.96	\$2.10	\$1.00	\$0.44	\$0.26	\$0.17	\$0.11	\$0.07	\$0.05	\$0.03	\$0.01	\$0.00
TX	7,010,993	\$321.38	1.682	1.577	0.694	\$3.24	\$0.62	\$0.29	\$0.13	\$0.08	\$0.05	\$0.03	\$0.02	\$0.01	\$0.01	\$0.00	\$0.00
UT	999,895	\$260.30	1.470	1.621	0.717	\$21.02	\$4.03	\$1.91	\$0.85	\$0.50	\$0.32	\$0.21	\$0.14	\$0.09	\$0.05	\$0.02	\$0.00
VA	2,148,305	\$340.49	1.533	1.567	0.697	\$12.28	\$2.36	\$1.12	\$0.50	\$0.29	\$0.19	\$0.12	\$0.08	\$0.05	\$0.03	\$0.01	\$0.00
WA	3,498,619	\$353.47	1.305	1.628	0.664	\$9.19	\$1.76	\$0.84	\$0.37	\$0.22	\$0.14	\$0.09	\$0.06	\$0.04	\$0.02	\$0.01	\$0.00
WI	1,551,035	\$439.92	1.673	1.793	0.690	\$20.13	\$3.86	\$1.83	\$0.81	\$0.47	\$0.31	\$0.20	\$0.14	\$0.09	\$0.05	\$0.02	\$0.00
WV	252,558	\$404.33	1.952	1.800	0.716	\$97.20	\$18.65	\$8.84	\$3.93	\$2.29	\$1.47	\$0.98	\$0.65	\$0.42	\$0.25	\$0.11	\$0.00
WY	161,610	\$522.73	1.456	1.591	0.691	\$262.58	\$50.39	\$23.87	\$10.61	\$6.19	\$3.98	\$2.65	\$1.77	\$1.14	\$0.66	\$0.29	\$0.00

Change In Risk Adjustment Transfer Amount from Additional 100 HCC Coefficient Points for Carrier's Membership by Market Share % Small Group 2014 ACA Market by State

% MARKET SHARE

STATE	MARKET SIZE (BILLABLE MEMBER MONTHS)	AVERAGE PREMIUM	AVERAGE PLRS	AVERAGE ARF	AVERAGE AV	1%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
AK	51,217	\$618.70	1.107	1.429	0.711	\$1,269.52	\$243.64	\$115.41	\$51.29	\$29.92	\$19.24	\$12.82	\$8.55	\$5.50	\$3.21	\$1.42	\$0.00
AL	1,677,211	\$377.82	1.305	1.446	0.779	\$20.50	\$3.93	\$1.86	\$0.83	\$0.48	\$0.31	\$0.21	\$0.14	\$0.09	\$0.05	\$0.02	\$0.00
AR	101,202	\$391.27	1.357	1.446	0.787	\$335.54	\$64.40	\$30.50	\$13.56	\$7.91	\$5.08	\$3.39	\$2.26	\$1.45	\$0.85	\$0.38	\$0.00
AZ	637,707	\$337.41	1.124	1.359	0.751	\$55.83	\$10.71	\$5.08	\$2.26	\$1.32	\$0.85	\$0.56	\$0.38	\$0.24	\$0.14	\$0.06	\$0.00
CA	4,620,047	\$406.29	1.062	1.365	0.771	\$9.84	\$1.89	\$0.89	\$0.40	\$0.23	\$0.15	\$0.10	\$0.07	\$0.04	\$0.02	\$0.01	\$0.00
CO	477,610	\$422.92	0.998	1.369	0.722	\$105.14	\$20.18	\$9.56	\$4.25	\$2.48	\$1.59	\$1.06	\$0.71	\$0.46	\$0.27	\$0.12	\$0.00
CT	1,161,894	\$477.66	1.172	1.430	0.728	\$41.64	\$7.99	\$3.79	\$1.68	\$0.98	\$0.63	\$0.42	\$0.28	\$0.18	\$0.11	\$0.05	\$0.00
DC	428,805	\$421.17	1.178	1.035	0.830	\$98.82	\$18.97	\$8.98	\$3.99	\$2.33	\$1.50	\$1.00	\$0.67	\$0.43	\$0.25	\$0.11	\$0.00
DE	138,406	\$497.65	1.192	1.422	0.764	\$355.76	\$68.28	\$32.34	\$14.37	\$8.39	\$5.39	\$3.59	\$2.40	\$1.54	\$0.90	\$0.40	\$0.00
FL	1,091,133	\$454.05	1.271	1.458	0.748	\$38.86	\$7.46	\$3.53	\$1.57	\$0.92	\$0.59	\$0.39	\$0.26	\$0.17	\$0.10	\$0.04	\$0.00
GA	765,330	\$417.60	1.245	1.416	0.729	\$52.00	\$9.98	\$4.73	\$2.10	\$1.23	\$0.79	\$0.53	\$0.35	\$0.23	\$0.13	\$0.06	\$0.00
HI	180,612	\$387.45	1.498	1.463	0.891	\$169.38	\$32.51	\$15.40	\$6.84	\$3.99	\$2.57	\$1.71	\$1.14	\$0.73	\$0.43	\$0.19	\$0.00
IA	341,935	\$358.51	1.247	1.409	0.768	\$99.61	\$19.12	\$9.06	\$4.02	\$2.35	\$1.51	\$1.01	\$0.67	\$0.43	\$0.25	\$0.11	\$0.00
ID	126,656	\$350.06	1.194	1.389	0.761	\$272.83	\$52.36	\$24.80	\$11.02	\$6.43	\$4.13	\$2.76	\$1.84	\$1.18	\$0.69	\$0.31	\$0.00
IL	1,008,102	\$460.40	1.415	1.428	0.780	\$38.31	\$7.35	\$3.48	\$1.55	\$0.90	\$0.58	\$0.39	\$0.26	\$0.17	\$0.10	\$0.04	\$0.00
IN	425,362	\$458.74	1.222	1.447	0.723	\$104.60	\$20.08	\$9.51	\$4.23	\$2.47	\$1.58	\$1.06	\$0.70	\$0.45	\$0.26	\$0.12	\$0.00
KS	215,353	\$360.41	1.289	1.394	0.773	\$153.58	\$29.48	\$13.96	\$6.21	\$3.62	\$2.33	\$1.55	\$1.03	\$0.66	\$0.39	\$0.17	\$0.00
KY	298,683	\$379.77	1.292	1.423	0.746	\$116.55	\$22.37	\$10.60	\$4.71	\$2.75	\$1.77	\$1.18	\$0.78	\$0.50	\$0.29	\$0.13	\$0.00
LA	558,192	\$392.88	1.265	1.391	0.771	\$65.99	\$12.66	\$6.00	\$2.67	\$1.56	\$1.00	\$0.67	\$0.44	\$0.29	\$0.17	\$0.07	\$0.00
MD	1,177,955	\$420.24	1.114	1.402	0.737	\$38.01	\$7.29	\$3.46	\$1.54	\$0.90	\$0.58	\$0.38	\$0.26	\$0.16	\$0.10	\$0.04	\$0.00
ME	227,132	\$367.17	0.980	1.479	0.679	\$194.91	\$37.41	\$17.72	\$7.88	\$4.59	\$2.95	\$1.97	\$1.31	\$0.84	\$0.49	\$0.22	\$0.00
MI	1,668,415	\$417.61	1.273	1.398	0.812	\$23.35	\$4.48	\$2.12	\$0.94	\$0.55	\$0.35	\$0.24	\$0.16	\$0.10	\$0.06	\$0.03	\$0.00

% MARKET SHARE CONTINUED

STATE	MARKET SIZE (BILLABLE MEMBER MONTHS)	AVERAGE PREMIUM	AVERAGE PLRS	AVERAGE ARF	AVERAGE AV	1%	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
MN	1,326,227	\$401.52	1.148	1.456	0.757	\$31.31	\$6.01	\$2.85	\$1.26	\$0.74	\$0.47	\$0.32	\$0.21	\$0.14	\$0.08	\$0.04	\$0.00
MO	392,713	\$424.50	1.354	1.431	0.761	\$94.63	\$18.16	\$8.60	\$3.82	\$2.23	\$1.43	\$0.96	\$0.64	\$0.41	\$0.24	\$0.11	\$0.00
MS	51,242	\$391.53	1.129	1.405	0.749	\$787.67	\$151.17	\$71.61	\$31.82	\$18.56	\$11.93	\$7.96	\$5.30	\$3.41	\$1.99	\$0.88	\$0.00
MT	267,795	\$385.66	1.037	1.397	0.743	\$164.27	\$31.53	\$14.93	\$6.64	\$3.87	\$2.49	\$1.66	\$1.11	\$0.71	\$0.41	\$0.18	\$0.00
NC	432,702	\$467.44	1.227	1.465	0.756	\$104.36	\$20.03	\$9.49	\$4.22	\$2.46	\$1.58	\$1.05	\$0.70	\$0.45	\$0.26	\$0.12	\$0.00
ND	122,888	\$381.65	1.035	1.273	0.827	\$353.14	\$67.78	\$32.10	\$14.27	\$8.32	\$5.35	\$3.57	\$2.38	\$1.53	\$0.89	\$0.40	\$0.00
NE	234,548	\$352.79	1.215	1.391	0.788	\$146.45	\$28.11	\$13.31	\$5.92	\$3.45	\$2.22	\$1.48	\$0.99	\$0.63	\$0.37	\$0.16	\$0.00
NH	228,034	\$488.84	1.183	1.464	0.752	\$214.32	\$41.13	\$19.48	\$8.66	\$5.05	\$3.25	\$2.16	\$1.44	\$0.93	\$0.54	\$0.24	\$0.00
NJ	2,709,904	\$481.23	1.244	1.445	0.744	\$16.95	\$3.25	\$1.54	\$0.68	\$0.40	\$0.26	\$0.17	\$0.11	\$0.07	\$0.04	\$0.02	\$0.00
NM	134,351	\$448.86	1.204	1.481	0.779	\$327.23	\$62.80	\$29.75	\$13.22	\$7.71	\$4.96	\$3.31	\$2.20	\$1.42	\$0.83	\$0.37	\$0.00
NV	302,813	\$380.03	1.148	1.369	0.765	\$129.43	\$24.84	\$11.77	\$5.23	\$3.05	\$1.96	\$1.31	\$0.87	\$0.56	\$0.33	\$0.15	\$0.00
NY	8,156,659	\$529.90	1.643	0.973	0.790	\$4.70	\$0.90	\$0.43	\$0.19	\$0.11	\$0.07	\$0.05	\$0.03	\$0.02	\$0.01	\$0.01	\$0.00
OH	705,949	\$446.32	1.460	1.467	0.741	\$51.38	\$9.86	\$4.67	\$2.08	\$1.21	\$0.78	\$0.52	\$0.35	\$0.22	\$0.13	\$0.06	\$0.00
OK	591,852	\$390.39	1.528	1.457	0.785	\$51.22	\$9.83	\$4.66	\$2.07	\$1.21	\$0.78	\$0.52	\$0.34	\$0.22	\$0.13	\$0.06	\$0.00
OR	513,161	\$407.19	1.140	1.422	0.765	\$82.52	\$15.84	\$7.50	\$3.33	\$1.94	\$1.25	\$0.83	\$0.56	\$0.36	\$0.21	\$0.09	\$0.00
PA	2,440,731	\$443.99	1.458	1.449	0.811	\$14.82	\$2.84	\$1.35	\$0.60	\$0.35	\$0.22	\$0.15	\$0.10	\$0.06	\$0.04	\$0.02	\$0.00
RI	475,269	\$459.66	1.465	1.464	0.815	\$78.29	\$15.03	\$7.12	\$3.16	\$1.85	\$1.19	\$0.79	\$0.53	\$0.34	\$0.20	\$0.09	\$0.00
SC	183,198	\$445.39	1.183	1.453	0.744	\$242.80	\$46.60	\$22.07	\$9.81	\$5.72	\$3.68	\$2.45	\$1.64	\$1.05	\$0.61	\$0.27	\$0.00
SD	98,905	\$422.47	1.339	1.433	0.765	\$375.58	\$72.08	\$34.14	\$15.17	\$8.85	\$5.69	\$3.79	\$2.53	\$1.63	\$0.95	\$0.42	\$0.00
TN	562,435	\$382.96	1.304	1.468	0.734	\$61.93	\$11.89	\$5.63	\$2.50	\$1.46	\$0.94	\$0.63	\$0.42	\$0.27	\$0.16	\$0.07	\$0.00
TX	2,712,942	\$422.26	1.353	1.396	0.752	\$13.66	\$2.62	\$1.24	\$0.55	\$0.32	\$0.21	\$0.14	\$0.09	\$0.06	\$0.03	\$0.02	\$0.00
UT	735,623	\$296.36	1.115	1.419	0.779	\$42.86	\$8.23	\$3.90	\$1.73	\$1.01	\$0.65	\$0.43	\$0.29	\$0.19	\$0.11	\$0.05	\$0.00
VA	1,546,921	\$414.44	1.139	1.370	0.802	\$27.92	\$5.36	\$2.54	\$1.13	\$0.66	\$0.42	\$0.28	\$0.19	\$0.12	\$0.07	\$0.03	\$0.00
WA	994,696	\$437.74	1.202	1.454	0.761	\$43.45	\$8.34	\$3.95	\$1.76	\$1.02	\$0.66	\$0.44	\$0.29	\$0.19	\$0.11	\$0.05	\$0.00
WI	378,212	\$463.03	1.331	1.433	0.757	\$109.01	\$20.92	\$9.91	\$4.40	\$2.57	\$1.65	\$1.10	\$0.73	\$0.47	\$0.28	\$0.12	\$0.00
WV	98,610	\$471.61	1.281	1.453	0.746	\$439.36	\$84.32	\$39.94	\$17.75	\$10.36	\$6.66	\$4.44	\$2.96	\$1.90	\$1.11	\$0.49	\$0.00
WY	26,270	\$481.10	1.064	1.366	0.712	\$1,960.59	\$376.28	\$178.24	\$79.22	\$46.21	\$29.71	\$19.80	\$13.20	\$8.49	\$4.95	\$2.20	\$0.00

AUTHORS

Ksenia Whittal, FSA, MAAA, is a consulting actuary in the Denver office of Milliman. Contact her at ksenia.whittal@milliman.com.

Douglas T. Norris, FSA, MAAA, PhD, is a principal and consulting actuary in the Denver office of Milliman. Contact him at doug.norris@milliman.com.

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