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# Changing With the Times: The Past and the Future of ACA Risk Adjustment

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While the ink was drying on the Patient Protection and Affordable Care Act (ACA) legislation nearly a decade ago, issuers confronted a vast expanse of unfamiliar territory as they transitioned from medical underwriting to a synthesis of guaranteed issue, modified community rating and risk adjustment. Risk adjustment, particularly, promised to address the anticipated marketwide instability by predicating a significant portion of issuer compensation on measured risk levels. Perhaps less expected was the instability introduced by the program itself.

Most uncertainty in risk adjustment outcomes are introduced by two main sources: market shifts and model changes. On one hand, market shifts represent the variety of interactions ACA issuers face every day—from members chasing the most attractive rates to risk pool expansion or contraction. Model changes, on the other hand, originate directly from the U.S. Department of Health and Human Services (HHS), as it monitors the landscape and institutes enhancements intended to strengthen program performance. Even carefully crafted, judiciously applied model revisions can lead to unexpected results and add unpredictability to an environment with limited demonstrated stability to this point. And, with actual risk transfers not known for years after setting rates,<sup>1</sup> issuers need to make the most of the limited information that *is* available to them.

Estimating ACA risk adjustment has been a considerable pain point for issuers in the past. In this article, we track its evolution over time, including an assessment of volatility, drivers of performance and trends. Our goal is to present detailed analyses of important, and perhaps neglected, aspects of the program that

can provide issuers with perspectives and techniques to enhance their understanding of the year-over-year changes and lessen the uncertainty going forward.

## A DIVERSE HISTORY

Risk adjustment's objectives haven't changed since the program began, but the model underlying the risk score calculation certainly has (see the sidebar "Notable Risk Adjustment Changes"). In this section, we break down risk adjustment's key performance trends and examine the program's historical effects on ACA participants, starting with marketwide metrics and stepping down into the elements shaping issuer experiences.

### NOTABLE RISK ADJUSTMENT CHANGES

**Annual:** Coefficient recalibrations to reflect more recent data

**2015:** Transition to a model assigning hierarchical condition categories (HCCs) through ICD-10 codes

**2017:** Addition of duration factors reflecting the length of a member's enrollment with an issuer

**2018:**

Addition of prescription drug classes (RxCs) to better account for claims costs for certain conditions

Reduction of the statewide average premium by 14 percent to proxy issuer administrative costs and change transfers to a paid claims basis

Addition of high-cost risk pool (HCRP) for members with annual paid claims over \$1 million

First adjustments from prior year risk adjustment data validation (RADV) audits

**2019:** Begin phase-in of External Data Gathering Environment (EDGE) data in coefficient calibration

**2021:** Updated condition categories calibrated from data with ICD-10 codes

### Model Impacts

Risk score changes happen every year and are shaped by several factors, such as migrations into and out of ACA-compliant plans, morbidity movements, coding practices and updates to the HHS hierarchical condition category (HHS-HCC) model, to name a few. Population and morbidity shifts can be difficult to predict (and are incredibly market-specific), but model changes are known with reasonable certainty in advance. Starting off our investigation, we focus on the HHS-HCC model and how its underlying components changed over time.

To understand the broad impacts of model change, we tracked risk scores for a fixed sample population<sup>2</sup> under historical HHS-HCC models, holding everything constant except the model from each year.<sup>3</sup> We then split each risk score into its primary components.

Figure 1 shows two prominent patterns:

1. The “condition” component (i.e., HCC plus RxC) is an increasing proportion of the total. This makes risk scores more responsive to documented conditions on the EDGE server, which means issuers have been able to increasingly influence their own risk transfers by focusing on medical coding accuracy, member pharmaceutical adherence and EDGE submission practices. It also implies conditions have

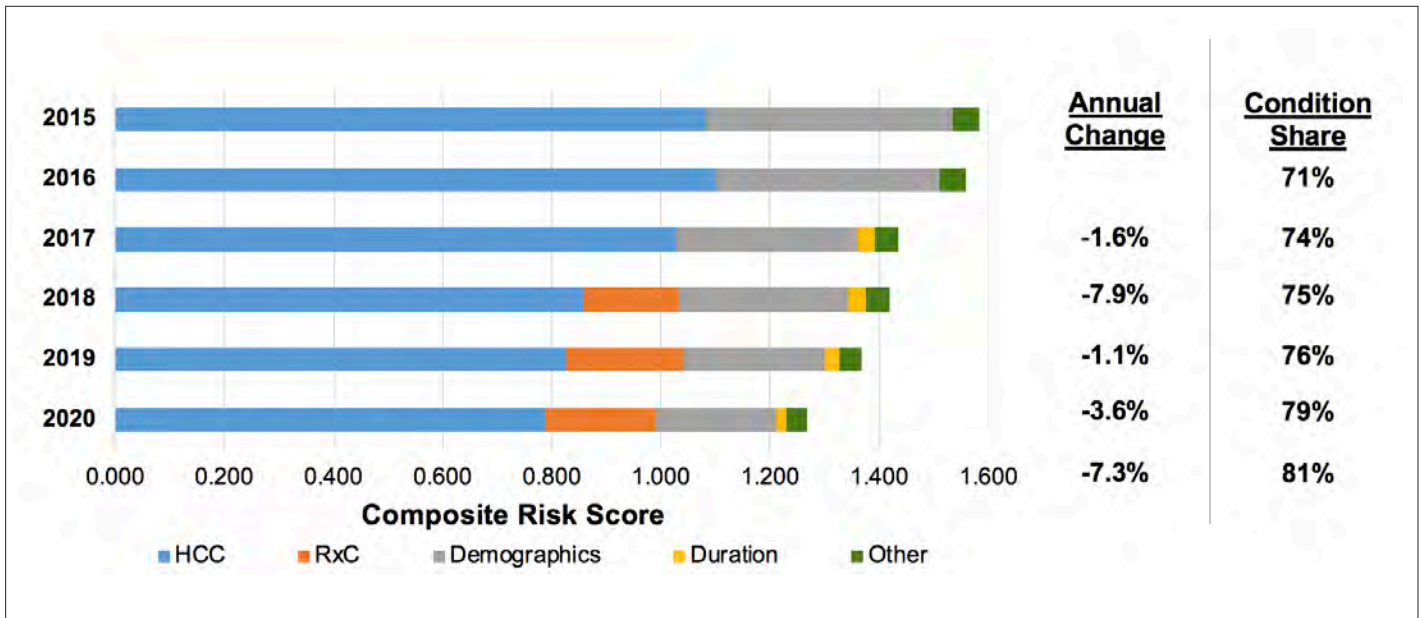
become a larger predictor of claim costs and, therefore, will be the largest differentiator of risk scores among issuers.

2. Composite risk scores have shrunk, suggesting the morbidity of the calibration population is moving closer to the average overall morbidity of ACA markets.<sup>4</sup> This shift to the average applies to all issuers but affects each one to varying degrees, which can present challenges when predicting average marketwide risk scores and transfers.

Moving from the population-wide metrics in Figure 1, issuer risk scores vary—sometimes extensively—based on the makeup of its enrollment. Figure 2 isolates the range of year-over-year issuer-level risk score changes in our sample data due solely to model updates. We graph these ranges around the composite averages reported in Figure 1.

To help explain the patterns in Figure 2, we illustrate annual risk score model coefficient changes for the major model components in Figure 3. The orange dots indicate the average risk score changes shown in Figures 1 and 2, while the green dots indicate demographic-specific changes. We group HCCs and RxCs into 21 common condition categories and plot their values in blue. The size of each blue and green dot denotes its contribution to the overall average risk score in that specific year.

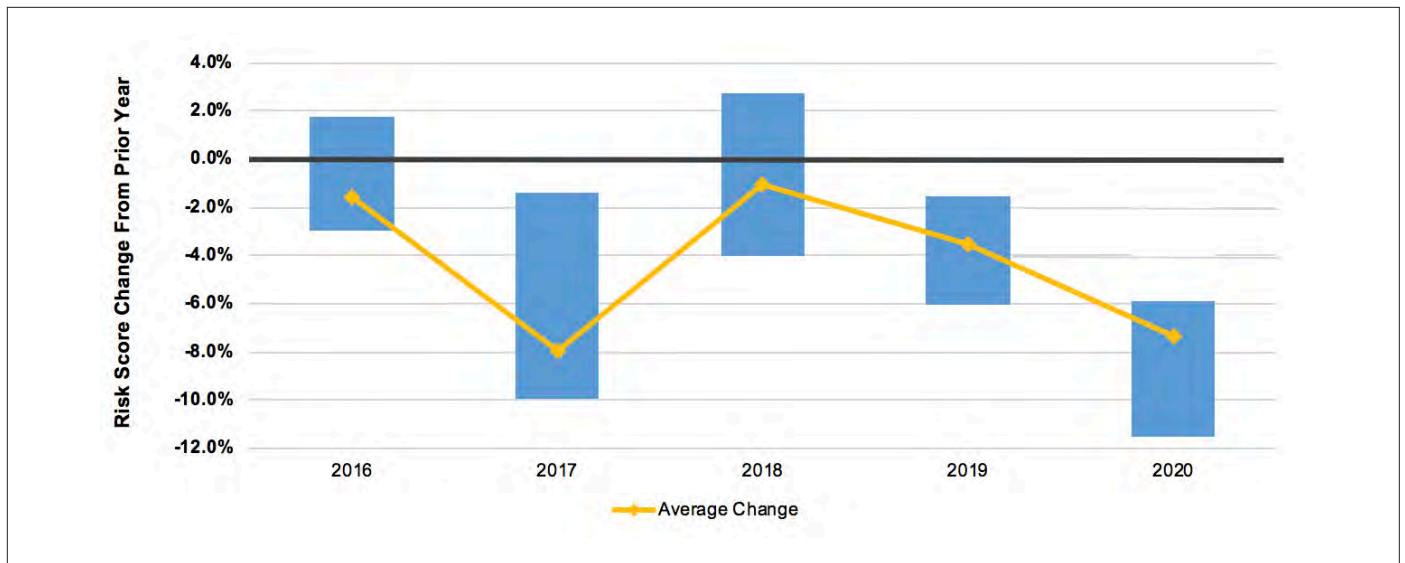
Figure 1  
Components of the Risk Score



We bucket the interaction between hierarchical condition categories (HCCs) and prescription drug classes (RxCs) with the RxC component. Nevertheless, the HCC-RxC interaction is still related to a member’s “condition.” The “Other” category contains the multiplicative effect of the induced demand factor applicable to each specific cost-sharing reduction plan variation, which is spread across all risk score components. This does *not* reflect high-cost risk pool transfers or risk adjustment data validation adjustments.

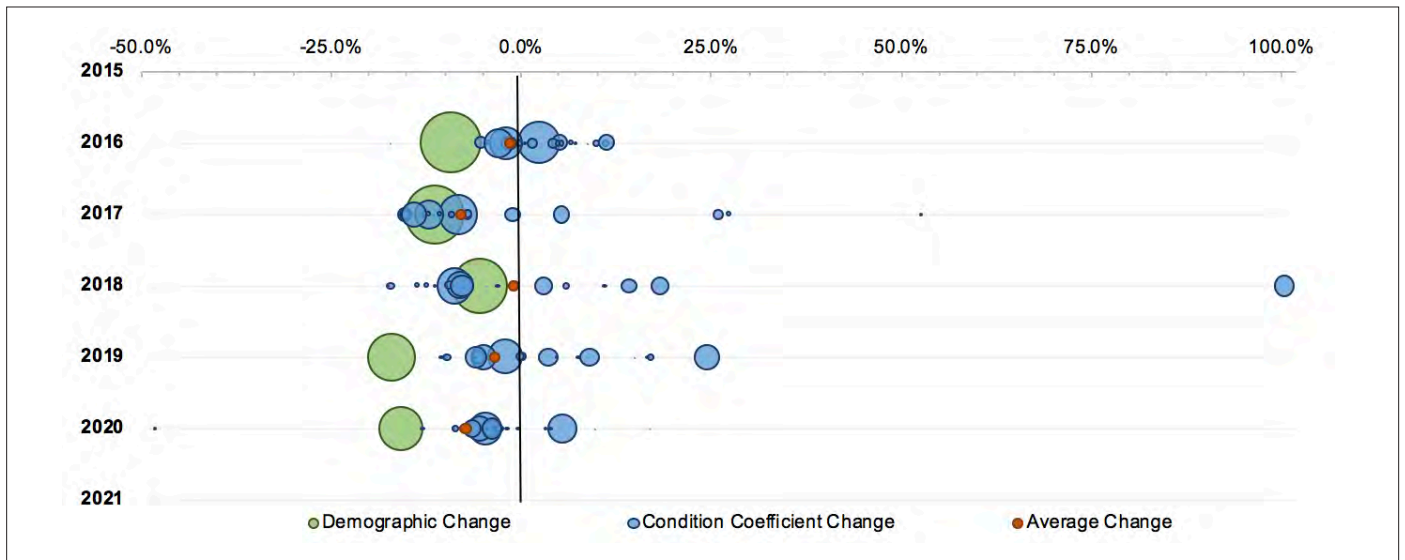
Data from proprietary calendar year 2018 ACA enrollment and claims.

Figure 2  
 Variability of Issuer Risk Score Changes From HHS-HCC Model Updates



Data from proprietary calendar year 2018 ACA enrollment and claims.

Figure 3  
 Annual Coefficient Changes vs. Risk Score Contribution



In this figure alone, we limit the coefficient changes to the silver risk score model for children and adults. This eliminates variability caused by differences in the HHS-HCC models among metallic tiers while still capturing the majority of the ACA market. The hierarchical condition category outliers of note include HIV/AIDS in 2017 (53 percent change), autoimmune conditions—particularly due to the introduction of RxCO9—in 2018 and 2019 (100 percent and 25 percent change, respectively) and liver conditions in 2020 (-48 percent change).

Data from proprietary calendar year 2018 ACA enrollment and claims.

Figure 3 illustrates considerable variability in annual risk scores across various model elements. This, in turn, helps explain why the issuer-specific risk score changes shown in Figure 2 can fall into such a broad range—and from model changes *only*. As a best practice, ACA issuers should evaluate how risk scores may change across the conditions common in their insured populations

as they develop financial projections and set rates, which will lessen the chances of unpleasant surprises when actual results emerge. With the adoption of RxCs into the model, the pressure to optimize drug formularies and coverage levels will increase as issuers monitor the pharmacy pipeline for how new drugs will affect risk adjustment in addition to plan costs. Analyses such as

those presented earlier will be important for issuers to stay on top of, particularly as the Centers for Medicare and Medicaid Services (CMS) introduces further structural changes to the HHS-HCC model, such as those beginning with the 2021 benefit year.

### Market Impacts

Now that we’ve explored some of the major HHS-HCC model changes and their effects, we turn our attention to how risk adjustment influenced the market over time. These impacts follow from pure model changes as well as member movements between benefit plans, across issuers and into or out of the ACA market itself.

From the start, risk adjustment represented a large portion of market premium—perhaps more than initially expected. And, similar to the model change trends, the results have a degree of variability around the averages. Figure 4 shows the range of the absolute value of risk transfers relative to total market premium at the state level.

The graphs in Figure 4 offer several insights:

- Risk adjustment remains a considerable portion of ACA premium, and the mean impact of risk adjustment has remained relatively stable,<sup>5</sup> particularly in the individual market.
- Other than compression over time in the small group market, variability among states has remained high in both markets. This suggests issuers continue to attract enrollees with

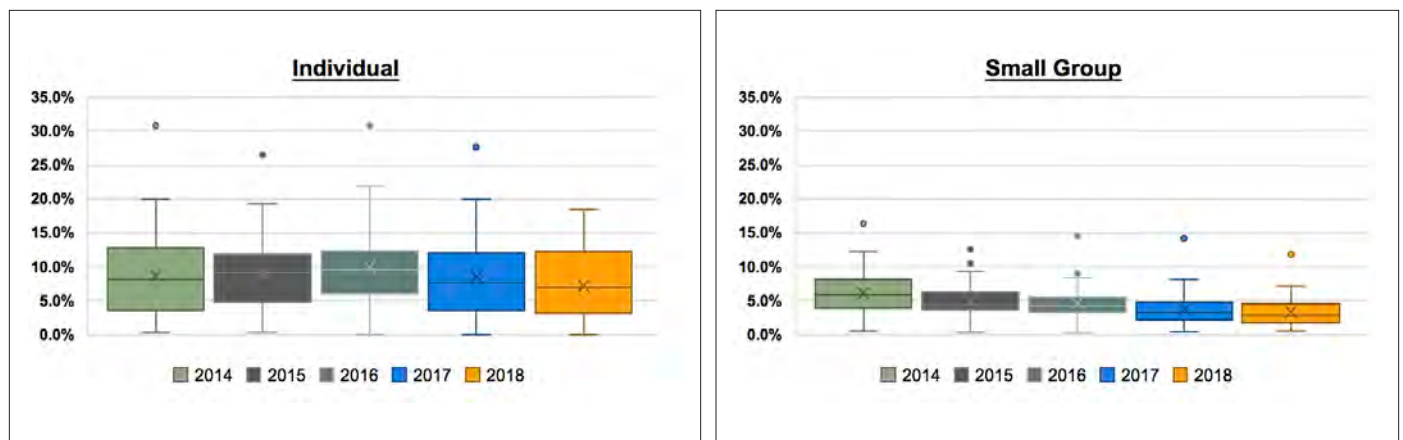


divergent morbidity profiles, which, coincidentally, is the primary justification for the risk adjustment program under guaranteed issue.

- Because HHS calibrates the risk adjustment model with a national data set, issuer risk scores can vary significantly from the nationwide average. Depending on the makeup of the market, any state can experience a high degree of variation in transfers among its ACA participants. Understanding a state’s risk profile is a key factor in more accurately capturing the program’s effect on a specific issuer.

As with model changes, the underlying patterns in Figure 4 are obscured by its big-picture focus. Risk adjustment shows some stability at the market level, but it is very much an issuer-specific experience. Therefore, as we progress to the issuer level in

Figure 4  
Range of State Risk Transfers as a Percentage of Total Market Premium

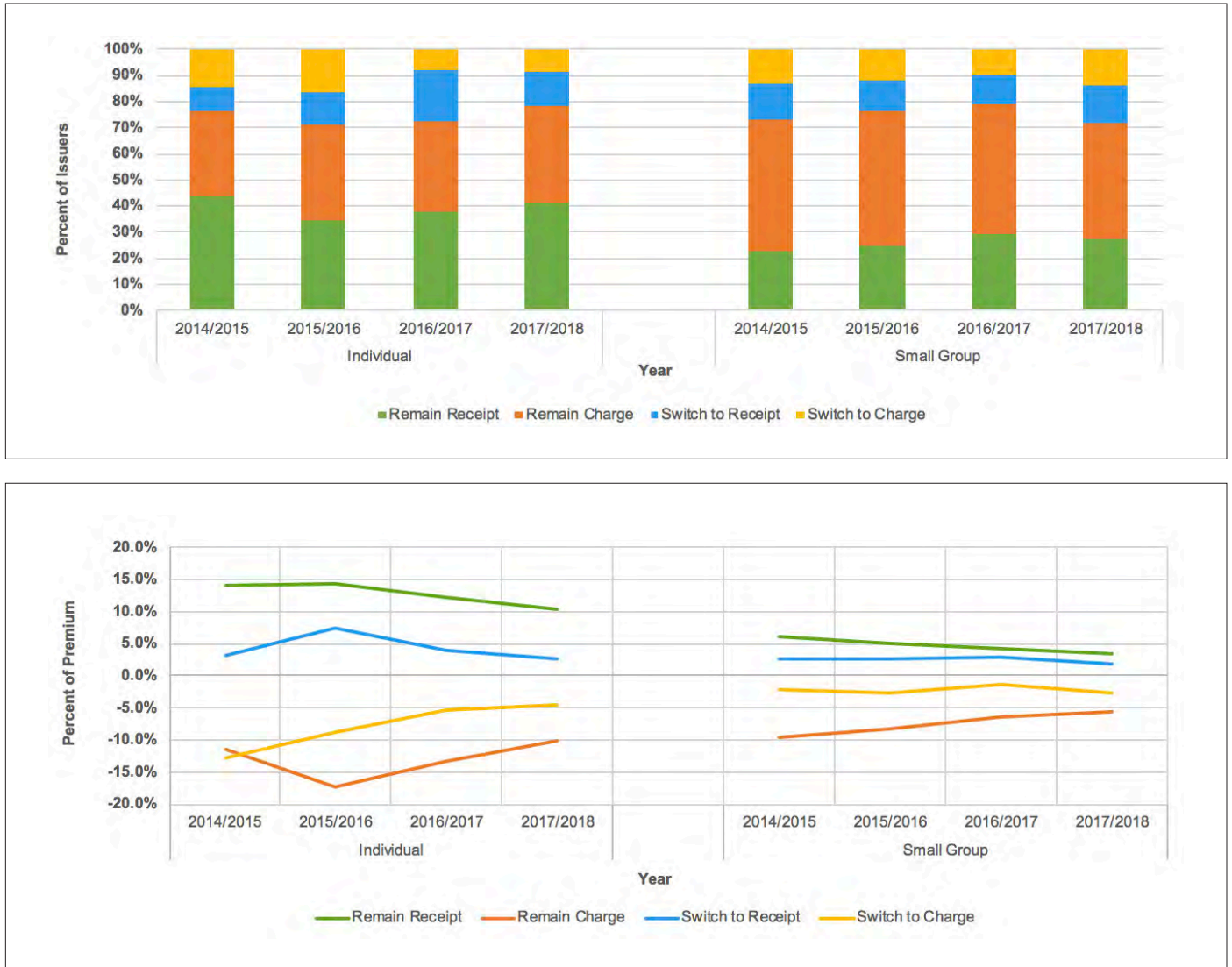


Each underlying data point represents an entire state. For a quick refresher on box-plots:

- The X represents the mean.
- The range of the box edges represents the 25th and 75th percentiles.
- The bars extending from the boxes represent the maximum and minimum observation, showing the overall variability (excluding outliers).
- The dots above the boxes represent outliers within the results, using a threshold of 1.5 times the interquartile range outside of the 25th or 75th percentiles.

Data from CMS summary risk adjustment reporting

Figure 5  
Issuer Level Risk Adjustment Directionality



Each underlying data point represents an issuer, grouped into one of four categories.

Data from CMS summary risk adjustment reporting; CMS unified rate review public use files; CMS medical loss ratio public use files

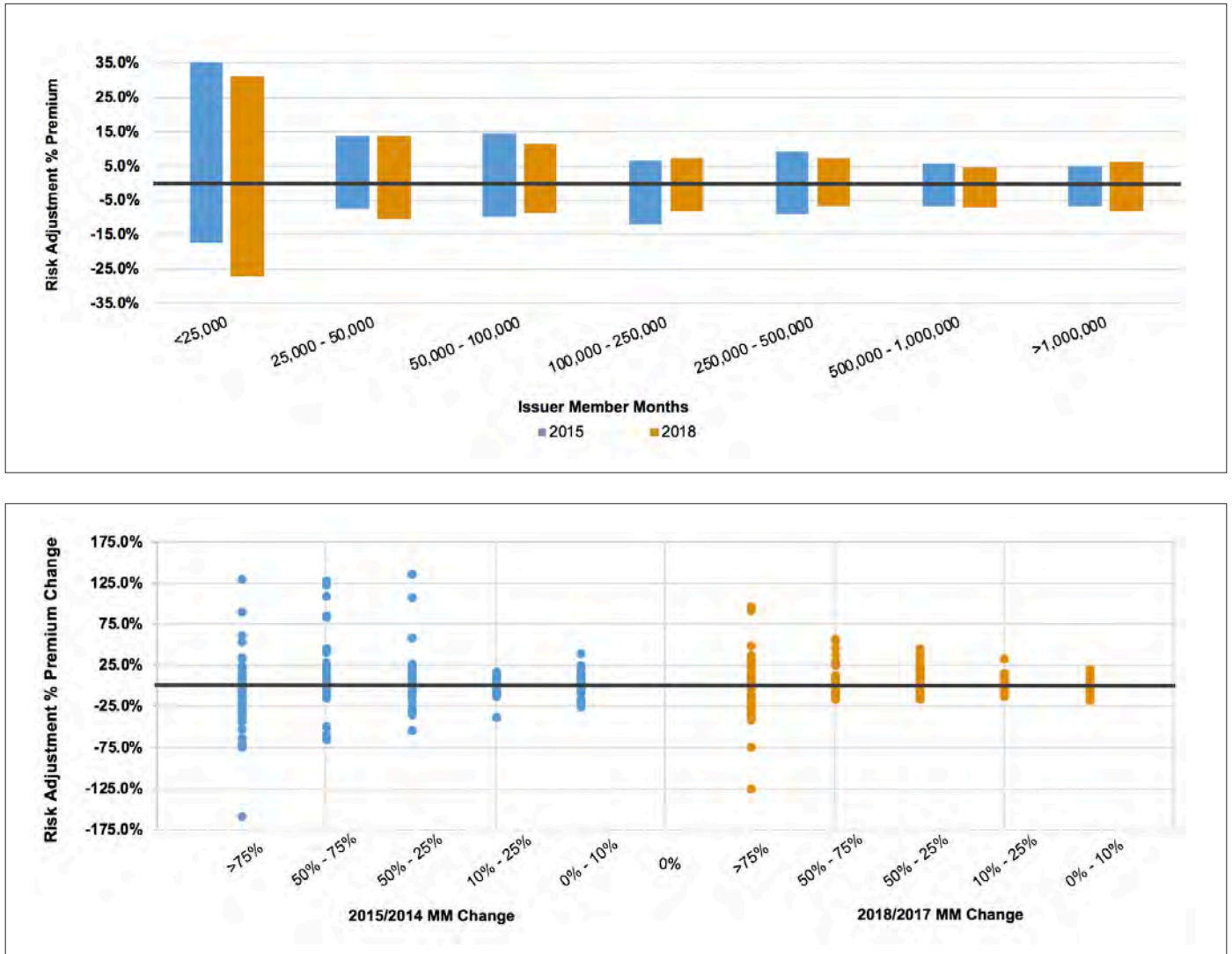
Figure 5, we first consider how risk adjustment positions change year over year at the issuer level.

The top of Figure 5 illustrates the level of stability in transfer direction, while the bottom of Figure 5 shows risk transfers as a percentage of premium for the same cohorts. While Figure 4 suggests a less impactful risk adjustment program over time, many issuers do experience large swings in results every year and may be unable to account for these shifts when setting premium rates. In fact, as many as 30 percent of renewing issuers reverse position (from receivable to charge or vice versa) from the prior year, and those changes represent fairly significant average transfers as a percentage of premium (from about a 5 percent

receipt to a 5 percent charge, for instance, in the individual market). Moreover, transfers represent a large percentage of premium for individual market issuers maintaining the same transfer direction (10 percent of premium for 70 percent of issuers in recent years), which means even those with stability in transfer direction year over year still experience considerable transfer levels (near the 75th percentile of state-level transfers exhibited in Figure 4).

The patterns underlying the averages in Figures 4 and 5 have even more variability at the specific issuer level. One commonly cited connection is between risk adjustment and enrollment.<sup>6</sup> Issuers come in a variety of sizes and, depending on market dynamics, can experience significant enrollment changes as

Figure 6  
Relationship Between Risk Adjustment and Enrollment



Each underlying data point represents an issuer, grouped into one of four categories.

Data from CMS summary risk adjustment reporting; CMS unified rate review public use files; CMS medical loss ratio public use files

prices shift. We conclude our analysis by highlighting the importance of enrollment mix. Figure 6 shows the relationship between risk adjustment and enrollment in two ways:

1. how the magnitude of risk adjustment varies by issuer size; and
2. how the magnitude of risk adjustment changes as issuer enrollment changes.

The data shown in the top of Figure 6 suggests risk transfers can represent a much larger portion of premium for smaller issuers. Additionally, those experiencing greater annual enrollment variability (bottom of Figure 6) also typically see risk transfers

fluctuate by larger amounts.<sup>7</sup> It appears the risk adjustment transfer payment approach is sensitive to issuer size and market shifts—and this reality is just as true now as in the beginning of the program (as demonstrated by the similarity in patterns between the blue bars/dots and the orange bars/dots). Issuers, especially the smaller ones and those experiencing significant changes in enrollment, need to be particularly aware of the potential range of values when evaluating transfers, setting assumptions and developing market strategies.

### AN UNKNOWN FUTURE

Risk adjustment has been and remains a source of apprehension for ACA issuers, given its many unknowns. Predicting annual marketwide enrollment shifts will always present challenges

in estimating transfers. However, HHS may explore avenues to address the other sources of uncertainty that are within its control: model changes and model accuracy. Although no statistically based risk adjuster will perfectly predict payer costs, there is, undoubtedly, room for improved HHS-HCC model performance. What does the future of risk adjustment look like? HHS has floated several ideas in various forums and publications, while other suggestions have been wrapped into broader health care discussions over the years.

The following list represents potential areas of risk adjustment model improvement expressed by HHS or others working within the health care space:

- further developing coefficients, reflecting larger portions of EDGE data and recent market changes;
- changing HCC/RxC values and categorizations to leverage the precision of ICD-10 codes;
- refreshing the CSR-induced utilization factors;
- introducing a nonlinear model to the calibration process;
- reflecting additional factors in the transfer calculation, including issuer network characteristics or issuer premium levels, among others;
- incorporating other factors with predictive power, such as social determinants of health and other socioeconomic data (such as credit scores);
- updating governance procedures to allow either the incorporation of more up-to-date information or more time for issuers to understand a model change;<sup>8</sup> and
- enhancing risk adjustment data validation to better align ultimate risk transfers with program goals and/or to minimize disruptive effects.<sup>9</sup>

Regarding the first two suggestions, risk adjustment in 2021, as finalized in the 2021 HHS payment notice released May 7, 2020, will likely utilize solely EDGE data from 2016 through 2018 ACA-compliant plans. Further, CMS will materially restructure the HCCs due to the availability of ICD-10 diagnoses in all three calibration years.

In addition, the March 24, 2016, CMS white paper on risk adjustment considered many risk adjustment improvements, several of which have been built into the risk adjustment program. Among other topics, CMS addressed incorporating network differences, nonlinearities in modeled plan liabilities and updating risk adjustment factors, including CSR-induced utilization. CMS has continued to discuss these ideas in recent payment notices.

Incorporating other factors with predictive power has recently generated much interest as well. Credit score, for example, has been very successful as an underwriting factor for many non-

health insurance products. Additionally, China has explored use of a “social credit score,” used to track individuals’ trustworthiness, though privacy concerns in the United States could present roadblocks to adoption of any similar measure.

Members of the Center for Consumer Information and Insurance Oversight have addressed the potential benefits and challenges with introducing social determinants of health into the ACA risk adjustment program in presentations at industry conferences.

## CONCLUSION

At the start of the ACA, most issuers concentrated on quantifying the interplay among looming market forces. As initial outcomes began to unfold, their attention pivoted to correcting pricing gaps between initial projections and experience. Now that many markets have begun to settle, issuers seem motivated by stability, predictability and equitability. Risk adjustment is the key (and arguably the only) nationwide mechanism currently in place to help achieve these goals.

HHS has acknowledged past issuer apprehension and has certainly sought to improve the HHS-HCC model. Each year, the makeup of the risk score has evolved, and well-intentioned changes have been made with an eye toward better capturing costs. But no model is perfect, and the ability for risk adjustment to stabilize markets remains an open question.

Issuers tend to focus on the big picture, tying both strategies and projections to macro-level influences. But the structure of the HHS-HCC model within the risk adjustment program has a real impact on issuer and state risk scores and, by extension, on issuer risk adjustment transfers and revenue. An issuer invested in analyzing the *details* of the model is often rewarded with deeper insights into key business drivers and, as a result, is presented a pathway to a more robust, comprehensive and well-informed strategy. ■

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*The authors are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial analyses herein.*

*In preparing this article, they relied upon several federal publications. Refer to the endnotes for additional details.<sup>10</sup> Differences between the theory discussed in this article and actual results depends on the extent to which future experience conforms to the assumptions made for this analysis. It is certain actual experience will not conform exactly to the assumptions used in this analysis for a variety of reasons, including changes to ACA risk adjustment regulations or guidance in future rulemaking or as a result of legislation or litigation. Issuers subject to the risk adjustment program should monitor their results and take corrective action when necessary. Public files are issuer-populated, and*



*not all information will be complete, accurate or consistent. After a cursory overview of the data, the authors found the information to be reasonable and in line with expectations. To the extent the data is not accurate, their conclusions would likely change.*

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## ENDNOTES

- 1 In many cases, risk adjustment results will only be available from three years before the effective date and earlier. For example, issuers required to file 2021 rates before July 2020 will have access to complete risk adjustment results through the 2018 benefit year.
- 2 Our population represents proprietary calendar year 2018 ACA enrollment and claims run through each final version of the HHS-HCC model. For calendar year 2019, we used the Centers for Medicare and Medicaid Services (CMS) model released in July. For calendar year 2020, we used the 2019 logic with the finalized

2020 coefficients from the annual payment notice. By fixing the population, we capture movements from model changes only rather than population shifts.

- 3 Although not reflected in the graphs, a typical measure of model “accuracy”—the R-squared—has been steadily increasing each year. The most prominent change came in 2018 when HHS introduced pharmacy factors, and risk score impacts shifted away from HCCs and into RxCs.
- 4 ACA risk scores are intended to predict costs relative to the average in the calibration population. The first years of risk adjustment coefficients were primarily based on large group data, and the average 2015 risk score of about 1.6 can be thought of as indicating the ACA population is 60 percent costlier than the average employer data underlying the risk adjuster. As CMS incorporated more recent data (and, beginning in 2019, ACA-specific EDGE data), the calibration experience data has become more similar to actual ACA experience.
- 5 The general decline in the 2018 average is driven by the reduction in all transfers of 14 percent for HHS’ model change to a claims basis. Had this adjustment not occurred, 2018 transfers would have been *higher than* 2017 in both markets. These numbers do *not* include transfer changes caused by RADV audits in 2018 but *do* include collections from the high cost risk pool. Going forward, state-specific transfer adjustments, such as the 50 percent dampening in Alabama’s small group market, could result in further transfer decreases.
- 6 Consumers for Health Options, Insurance Coverage in Exchanges in States (CHOICES) to U.S. Department of Health and Human Services Secretary Sylvia Burwell. Technical Issues with Risk Adjustment and Risk Corridor Programs. November 4, 2015. <https://web.archive.org/web/20170128053231/http://nashco.org/wp-content/uploads/2015/11/CHOICES-White-Paper-on-Risk-Adjustment-Issues.pdf> (accessed January 31, 2020). Also, Figures 5.2 and 5.3 of CMS’ March 31, 2016, risk adjustment discussion paper regarding the distribution of transfers as a percentage of premium by issuer size show significantly more volatility by issuer size. CMS Center for Consumer Information and Insurance Oversight. HHS-Operated Risk Adjustment Methodology Meeting Discussion Paper. CMS, March 31, 2016, <https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/RA-March-31-White-Paper-032416.pdf> (accessed March 24, 2020).
- 7 Greater annual enrollment variability is more likely to occur for smaller issuers but happens with surprising regularity for all ACA participants. In 2018, over half of total continuing issuers and one-third of large issuers (over 500,000 reported member months) experienced at least a 25 percent change in membership, which is reflected in the portion of Figure 6 with the most volatility.
- 8 In comments in response to the proposed 2021 HHS payment notice and the December 6, 2019, RADV white paper, the American Academy of Actuaries emphasized the role of sufficient data and time in ensuring that changes to risk adjustment and risk adjustment data validation contribute to the goals of the risk adjustment program and its purpose as the ACA’s primary premium stabilization mechanism.
- 9 Ibid.
- 10 Benefit year 2014 through 2019 Risk Adjustment Updated HHS-Developed Risk Adjustment Model Algorithm “Do It Yourself (DIY)” Software; benefit year 2014 through 2018 annual CMS risk adjustment reports; benefit year 2014 through 2021 final HHS payment notices; various published RADV Protocols for PPACA HHS Risk Adjustment Data Validation; benefit year 2016 through 2020 Unified Rate Review Template (URRT) Public Use Files (PUFs); benefit year 2014 through 2016 Medical Loss Ratio PUFs.