WHITE PAPER

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2018 RADV Preliminary Market Average Error Rates

Executive Summary

Wakely collected Wakely National Risk Adjustment Reporting (WNRAR) participants' 2018 Risk Adjustment Data Validation (RADV) data files including their initial validation audit (IVA) results[1] to estimate national HCC Group average failure rates and confidence intervals. Based on these national benchmarks, Wakely also estimated HIOS ID (i.e. issuer) and market average error rates.[2] Our results included data from a total of 407 out of 552[3] HIOS IDs who were subjected to the 2018 benefit year RADV program. 110 of these HIOS IDs included in our study were exempted from conducting a RADV IVA for 2018 due to meeting one of the three exemption criteria.[4] This paper presents national level results of our analysis for 2018 as well as a comparison of those results to our 2017 study and 2017 CMS results.[5]

Based on our 2018 national benchmarks and study participants, we estimated 39 HIOS IDs would have non-zero error rates and therefore would have adjustments to their risk scores and ultimately their risk transfers. Consequently, based on our survey sample of 62 markets,[6] we estimated 30 markets to have a non-zero average error rate. It is important to understand that even if an issuer has a 0% error rate in their RADV results, their risk transfer will still be adjusted if they are in a market with a non-zero error rate. Table 1 below summarizes the high level issuer and market results from Wakely's 2018 RADV study.

Table 1: High Level 2018 Wakely RADV Results

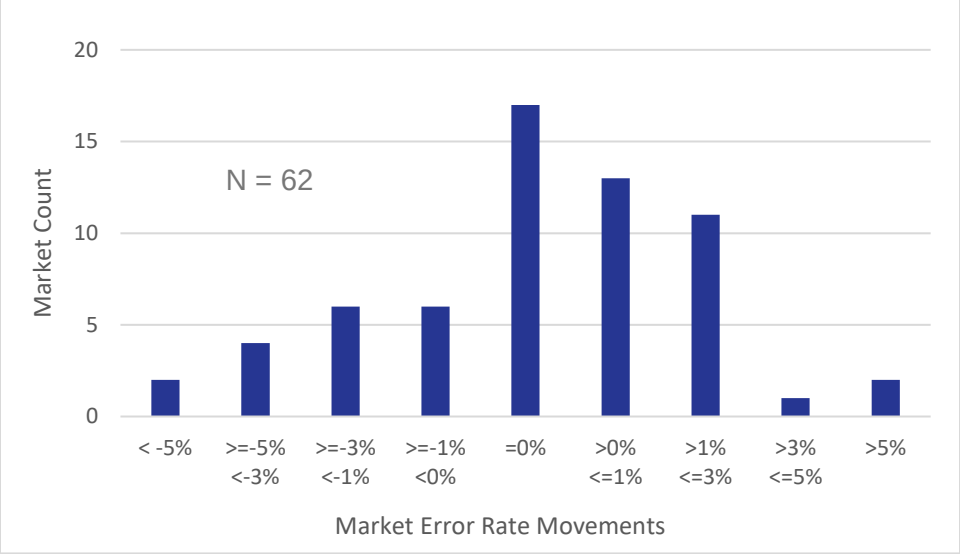
	Total	Positive Error Rates	Negative Error Rates	Percent of Non-Zero Error Rate
Issuers	407	20	19	9.5%
Markets	62	16	14	48.4%

[1] Participation in the 2018 RADV results survey was optional for WNRAR participants. Wakely only provided issuer and market results to participants who voluntarily submitted their RADV results.
[2] RADV error rates are used to adjust issuers' plan liability risk scores (PLRS). 2018 RADV error rates may adjust 2018 or 2019 PLRS, which will subsequently impact 2018 or 2019 risk adjustment transfers.
[3] As stated on page 2 of the CMS 2018 Risk Adjustment Summary Report: https://www.cms.gov/CCIIO/Programs-and-Initiatives/Premium-Stabilization-Programs/Downloads/Summary-Report-Risk-Adjustment-2018.pdf.
[4] The majority of these issuers were exempt for having less than $15 million of annual premiums in 2018. Full exemption criteria can be found in pages 17508 through 17511 of https://www.govinfo.gov/content/pkg/FR-2019-04-25/pdf/2019-08017.pdf.
[5] Wakely's RADV results are based on our understanding and interpretation of guidance in payment notices and protocols.
[6] This market total excludes any WNRAR markets in which one or more WNRAR issuers comprising 25% or more of the market did not participate in the Wakely RADV survey.

At the issuer level, the number of HIOS IDs with non-zero error rates decreased significantly in 2018. However, the number of issuers required to complete a RADV IVA in 2018 also dropped significantly due to a large number of issuers being exempt. Further comparisons between our 2017 and 2018 RADV results can be found in the "Results and Observations" section below.

When we compared Wakely's 2017[7] and 2018 RADV surveys, the number of markets with non-zero error rates decreased from 32 to 30 (out of 62 markets). Figure 1 below shows the count of markets by the amount that their error rate changed in our study from 2017 to 2018. While majority of the markets have less than 1% change in error rate, it is important to note that 26 out 62 markets are estimated to have absolute error rate changes of higher than 1% from 2017 RADV to 2018 RADV. Therefore, estimating current year RADV impact based on prior year RADV results may not be accurate and reliable.

Figure 1: Market Error Rate Changes from Wakely's 2017 to 2018 Study



Based on our review of Wakely's 2017 estimates to actual published CMS 2017 results, we concluded that our methodology produces reliable estimates, but understandably, some differences exist. Please see Appendix B for additional information on our review.

Background

CMS released final details for the 2018 RADV program, including the calculation details to determine the issuer error rate, in the 2020 Notice of Benefit and Payment Parameters (NBPP).[8]

For the 2018 RADV program, issuers were required to submit their initial validation audit (IVA) Package One Reporting to CMS on January 9th, 2020. After completing subsequent steps including the secondary validation audit (SVA), CMS is expected to release the 2018 RADV results in May of 2020. In this white

[7] https://www.wakely.com/blog/2017-radv-preliminary-market-average-error-rates
[8] https://www.govinfo.gov/content/pkg/FR-2019-04-25/pdf/2019-08017.pdf

paper, Wakely estimated preliminary 2018 RADV market average error rates using participants' IVA results and compared the preliminary 2018 results to our 2017 RADV study and 2017 CMS results.

Wakely performed a similar study on WNRAR participants' 2017 RADV IVA files and published a white paper in February 2019.[9] Appendix B provides a comparison of Wakely's 2017 RADV Study results compared to actual 2017 CMS Results.

Methodology

Wakely sent participating issuers our project codes to summarize preliminary 2018 RADV files, namely 2018 RADVEE, RADVDE, RADVPSF, RATEE and IVA_Findings_Report. Wakely's project codes compiled and summarized issuers' IVA results by member cohorts. No PHI or member level details were provided to Wakely. We reviewed summary files for reasonability, and in many cases, we worked with issuers to address potential issues but did not audit the data and cannot guarantee that it was error-free.

Using participants' IVA results, Wakely compiled the reported EDGE server recorded Hierarchical Condition Categories (HCCs) and IVA substantiated HCCs for sampled RADV members at the issuer level to determine HCC failure rates nationally. Wakely, then, ranked each HCC's failure rates across all participants to estimate HCC Groups – namely, Low, Medium and High HCC Groups. The mean failure rate and confidence interval for each HCC Group were calculated separately to establish the estimated national benchmarks.

Using these national benchmarks, we estimated issuers' error rates based on our understanding of available guidance related to CMS' methodology. However, since member-level information was not collected, certain calculations and metrics - such as enrollee level adjustments – were calculated at a rolled up cohort level. Our modified approach will cause inaccuracies in the issuer error rate and therefore market error rate. This modified approach does not impact our estimates of failure rates and ability to identify outliers. Market average error rates were then estimated by weighting each issuer's estimated 2018 RADV error rates with their estimated 2019 total risk based on our WNRAR project. We did not include all submitted HIOS IDs in our market error rate calculation. 2018 HIOS issuers that are no longer present in the 2019 ACA market were excluded in our determination of market error rates.[10] Further, issuers who reported being exempt from conducting a 2018 RADV IVA and issuers new to the ACA market in 2019 were also excluded from calculation of the national metrics. However, both sets of these issuers (exempt and new) were included in market error rate calculations by implicitly assigning a 0% error rate and using 2019 estimated total risk in weighting.[11]

In some markets, we did not have full participation as there were issuers who did not participate in the survey or do not participate in WNRAR. In most markets, we had over 90% participation, including several

[9] https://www.wakely.com/blog/2017-radv-preliminary-market-average-error-rates
[10] If these issuers have a positive error rate, their results may still impact the 2018 risk transfers retroactively.
[11] Estimated total risk is calculated based on issuers' 2019 interim WNRAR results, with data through October 2019.

markets with 100% participation. In the market summary statistics, we only included WNRAR markets where we have at least 75% or more RADV participation as well.[12]

Please review the caveats and limitations tab in the Excel file delivered to your organization with this report for additional information and important data notes. Additional caveats specific to this paper are also included in the Disclosures and Limitations section below.

Results and Observations

Summary of 2018 Preliminary Wakely RADV Results

We had full WNRAR participation in 62 markets, which includes 32 small group markets and 30 individual markets (including 1 merged market). We did not include catastrophic market results in this analysis. There were additional markets where we reported back market average error rates but did not include these markets in the counts below due to insufficient participation.

Based on our estimates, we expect 30 markets to have non-zero average error rates. For all issuers within a market with non-zero error rates, we expect their 2019 risk transfers to be adjusted as a result of the 2018 RADV program. Of these 30 markets, we are expecting 16 markets with positive error rates and 14 markets with negative error rates. Tables 2 and 3 below summarize our findings for Wakely's 2018 RADV study.

Table 2: RADV Summary Statistics – Issuer

Data Element	2017 CMS	2017 Wakely RADV[13]	2018 Wakely RADV
HIOS ID Count	**613**	**474**	**407**
Non-Exempt	580	457	297
Exempt	33[14]	17	110[15]
Non-Exempt Issuers	**580**	**457**	**297**
Non-zero Error Rate	110	87	39
Positive Error Rate	69	64	20
Negative Error Rate	41	23	19

[12] We exclude any WNRAR markets in which one or more WNRAR issuers comprising 25% or more of the market did not participate in the Wakely RADV survey.
[13] Due to additional breakout and inclusion criterion, numbers presented in this column may differ slightly from Wakely's 2017 RADV white paper.
[14] The number of exemptions were lower in the 2017 RADV program as issuers were only exempted if they had less than 500 member months.
[15] The majority of these issuers were exempt for having less than $15 million of annual premiums in 2018.

Table 3: RADV Summary Statistics – Market

Data Element	2017 CMS	2017 Wakely RADV	2018 Wakely RADV
Market Count	**100**	**62**	**62**
Non-zero Error Rate	44	32	30
Positive Error Rate	15	11	16
Negative Error Rate	29	21	14
Market Error Rate Metrics			
Max Market Error Rate Estimate	8.62%	9.65%	5.25%
Min Market Error Rate Estimate	-7.44%	-4.37%	-4.81%
Average Market Positive Error Rate	1.47%	2.37%	1.22%
Average Market Negative Error Rate	-1.99%	-1.14%	-1.85%

A negative market average error rate indicates that the market average risk scores are expected to increase. For example, if an issuer's RADV results shows that it had a zero error rate but the market average error rate is negative, the issuer's risk score will remain the same while the market average risk score is expected to increase. This will result in a lower relative risk after RADV for that issuer, and hence, risk transfer receipt will decrease. In other words, risk transfer charge will increase for that issuer. We have included a simplified sample calculation of how RADV error rates may impact issuers' risk transfers in Appendix A.

Comparison to 2017 Wakely RADV Results

Tables 2 and 3 above also show a high level comparison of Wakely's 2018 preliminary RADV results to Wakely's 2017 RADV study and CMS' 2017 RADV results at the issuer and market level. See Appendix B for additional comparisons of Wakely's 2017 RADV Study to 2017 CMS Results.

Error Rate Changes

The number and distribution of market error rates stayed relatively similar with a slight increase in the number of markets with 0% error rates in our 2018 study. However, it is important to note 65% of markets did not have the same sign error rate as in 2017 (i.e. market error rate was not 0%, positive, or negative in two consecutive years). Figures 1, 2 and Table 4 provide additional detail on market error rate distribution and continuity between the two years.[16]

[16] See Executive Summary for Figure 1.

Figure 2: Count of Markets by Error Rate Bins

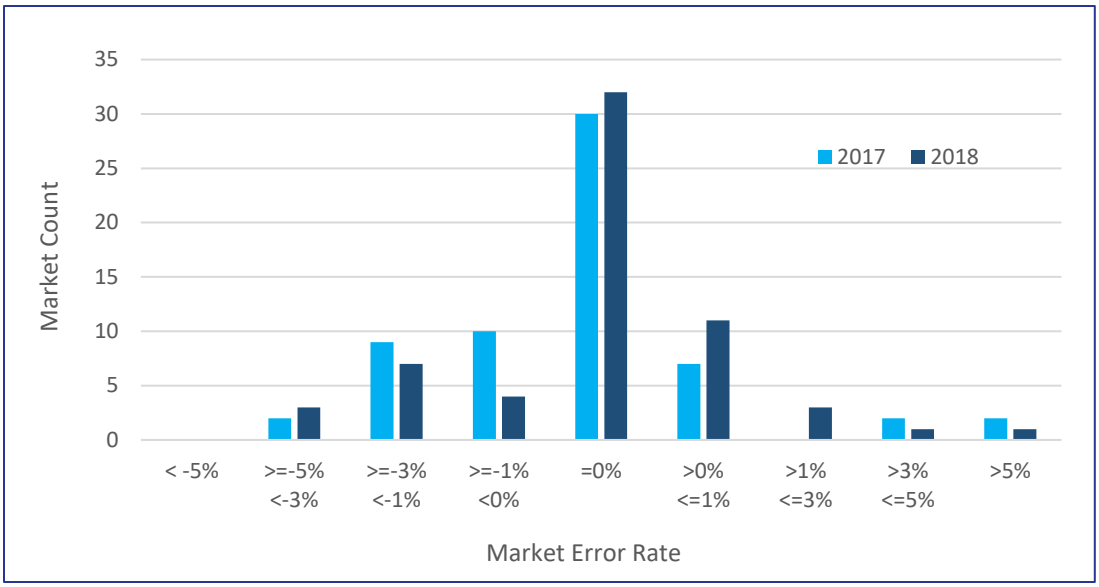


Table 4: RADV Summary Statistics – Market Error Rate Continuity

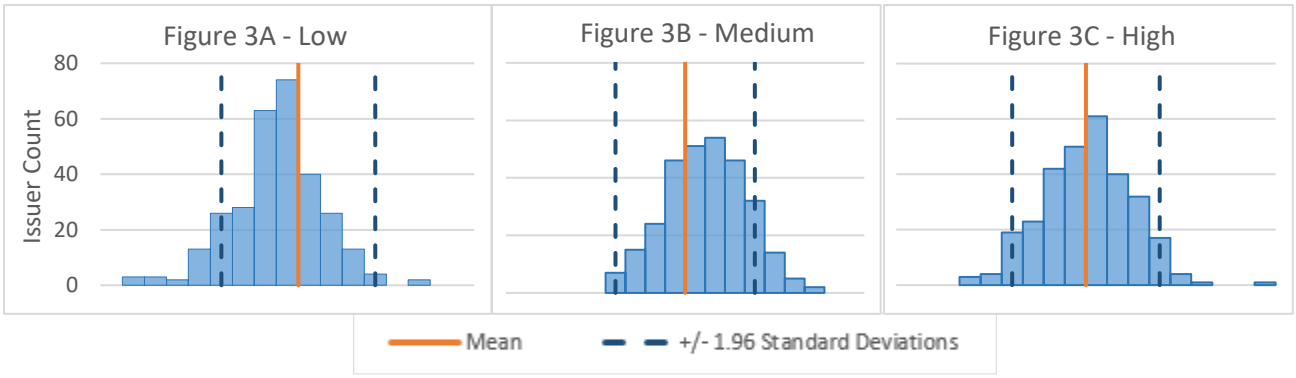
Data Element	Count	Percent
Number of Markets in both 2017 & 2018 Wakely Study	**62**	**100%**
# of Markets with no error rate in both years	17	27%
# of Markets with same sign	5	8%
# of Markets switching signs	12	20%
# of Markets with non-0 error rate in 17 and 0% error in 18	15	24%
# of Markets with 0% error rate in 17 and non-0% error in 18	13	21%

The issuer error rates, which ultimately determine the market error rates discussed above, are calculated by comparing each issuer's failure rates by HCC Group against the national distribution. More specifically, if an issuer's HCC Group failure rate is outside of the 95% confidence interval, an adjustment to the issuer's PLRS will be made; they will have an error rate. More discussion on the national confidence intervals and its impact are in the next section.

National Confidence Interval

In the 2018 RADV study, the HCC Group confidence interval mean and standard deviation decreased for each HCC Group compared to Wakely's 2017 study. These changes resulted in the lower bound of each confidence interval in 2018 remaining relatively steady compared to 2017 while the upper bound of each confidence interval decreased in 2018 as issuer failure rates decreased nationally.

Figures 3A, 3B, and 3C: HCC Group Failure Rate Distribution



Figures 3A, 3B, and 3C above show the failure rate distribution of Wakely's 2018 RADV study's HIOS IDs. It is important to note that issuers close to the 95% confidence interval (or tails) are more susceptible to have their error rate change due to differences in our study and final CMS results. In other words, a small change to HCC Groupings or national confidence intervals could reclassify their outlier status and therefore issuer error rate.

Since our study did not include all HIOS IDs that operated in 2018, we note that our estimated national benchmarks for average failure rates and confidence intervals by HCC Group are inaccurate and will vary when additional HIOS IDs are included in CMS final calculation. In addition, we are relying on initial validation audit that has not yet been subjected to secondary validation audit (SVA). Issuers who fail the SVA pairwise mean testing will be given their final RADV results based on their SVA findings instead.

Given that current guidance indicates that HCC Group adjustment only occurs if an issuer's failure rate falls outside of the 95% confidence interval, issuers who fall close to the 95% confidence interval (such as between the 92.5% confidence interval and the 97.5% confidence interval) are at higher risk of moving in and out of the 95% confidence interval depending on the final determination of the national confidence interval.[17] Additionally, 110 of the 407 HIOS IDs collected in our study were exempt from conducting an IVA in the 2018 RADV program. The proportion of exempt to non-exempt issuers not participating in our study may differ from the proportion of those who did participate and may create variances in the national confidence intervals presented in this study.

[17] Confidence interval is calculated based on the standard deviation of each HIOS ID to the mean failure rate as determined nationally. Our study only included 407 HIOS IDs (297 non-exempt included in the histograms), and we expect CMS final results to include many more HIOS IDs (closer to 550).

Additional Observations

RXCs

The 2018 RADV program was a pilot year for RXCs. Several participants reported an issue with date validation of RXCs in their 2018 RADV audit that resulted in most or all RXCs failing the validation.[18] This issue affected around 20% of the 297 non-exempt HIOS IDs for which we collected RADV data.

In the proposed 2021 Notice of Benefit and Payment Parameters,[19] CMS proposed making the 2019 RADV program another pilot year for RXCs.

Exemptions

The number of non-exempt HIOS IDs in the 2018 RADV study dropped to 297 from 457 in our 2017 study. This is due in large part to CMS exempting HIOS IDs with less than $15 million of annual ACA premiums (materiality threshold) from the RADV program.[20] However, these HIOS IDs will have to perform a RADV audit approximately once every three years. Since the 2017 RADV program was the first year the results of the RADV program were applied to risk transfers, CMS required these HIOS IDs to conduct a RADV audit while still allowing issuers with less than 500 billable member months to be exempted.

Disclosures and Limitations

The data included in this report and produced by the Wakely National Risk Adjustment Reporting (WNRAR) project are inherently uncertain and relies upon data provided by WNRAR participants. Users of this white paper should be qualified to use it and understand the results and the inherent uncertainty. Wakely makes no warranties regarding the results. Actual results will vary, potentially significantly. We strongly recommend that Wakely review the results of any modeling and the appropriateness of applications that use the summaries contained herein.

We performed reasonability checks on the data where possible but did not audit the data. RADV results from issuers not participating in this optional survey may change the results provided in this white paper. Other uncertainty in the estimates contained in these results include but are not limited to the following:

1. The calculated market average error rates are based on our understanding of the RADV program. Our interpretation of the available methodology may be flawed or inconsistent with the actual approach that will be used.

[18] Multiple issuers reported dates being inconsistent between pharmacy claim process dates in EDGE and the date on the screenshot used to validate the pharmacy claim causing most or all RXCs to not be validated.
[19] https://s3.amazonaws.com/public-inspection.federalregister.gov/2020-02021.pdf
[20] Full exemption criteria can be found in pages 17508 through 17511 of https://www.govinfo.gov/content/pkg/FR-2019-04-25/pdf/2019-08017.pdf

2. The results presented in this white paper are based on initial validation audit (IVA) results due to the timing of this analysis. This does not include any adjustments made through the secondary validation audit (SVA) that would be performed after our data collection.
3. Not all health plans in each state and market participated in the study. In addition, we do not have full national participation. CMS national benchmark will include all HIOS IDs subjected to the RADV program.
4. Wakely used 2018 RADV error rates weighted by 2019 total risk (as reported in our WNRAR study) to estimate market average error rates. 2019 market membership and total risk may not be representative of future market membership. If an issuer with a large RADV error rate gains or loses significant market share in future years, the results may be significantly impacted.
5. Our interpretation of CMS guidance on RADV[21] may not be perfect. Where model parameters or methodology are not clear or appear to be erroneous, we have made decisions on what we believe to be the most appropriate approach. Actual implementation by CMS may be different than we have assumed.
6. We did not consider regulatory changes currently being considered or which may be developed and enacted after the release of this report.

Wakely is not a legal or audit firm. Please consult your accounting, legal and actuarial experts in developing your internal estimates.

Please contact Chia Yi Chin at ChiaC@wakely.com, Matt Sauter at MattS@wakely.com, or Dagny Grillis at Dagny.Grillis@wakely.com with any questions or to discuss these estimates.

Special thanks to Maris Hayes in assembling this document.

[21] https://www.regtap.info/uploads/library/HRADV_2018Protocols_070319_5CR_070519.pdf

Appendix A – Sample Illustration of Risk Transfer Impact

In this section, we are illustrating a simplified example of the potential impact of the RADV program on issuers' risk transfers. These results do not represent actual results from any markets/participants in our 2018 RADV study above. It is only provided for discussion purposes.

Exhibit A1 – Risk Transfer Changes in Mock-up Market

Statewide RA Premium (P): $500

	A	B	C = A * B	E = B / Mrkt(B)	F = (E-1)*A*P	G	H	I* = E*(1+H)* (1-G)	J=(I-1)*A*P	K=J-F	L=K/(A*P)
				Pre-RADV Transfers		RADV Results		Post-RADV Transfers		Change in Transfers	
Issuer	Billable Member Months	PLRS	Total Risk	Relative Risk	Transfer	Issuer Error Rate	Market Error Rate[1]	Relative Risk[2]	Transfer	Change in Transfers	% of Premium
Issuer A	50,000	1.10	55,000	1.116	$ 2,898,551	-6.0%	3.4%	1.224	$ 5,592,499	$ 2,693,949	10.8%
Issuer B	100,000	1.00	100,000	1.014	$ 724,638	0.0%	3.4%	1.049	$ 2,474,270	$ 1,749,632	3.5%
Issuer C	200,000	0.95	190,000	0.964	$ (3,623,188)	8.0%	3.4%	0.917	$ (8,274,976)	$ (4,651,787)	-4.7%
Market	350,000	0.99	345,000	1.000	$ -	**3.4%**	3.4%	1.000	$ -	$ -	0.0%

[1] Market error rate calculated by taking issuer error rate weighted by total risk; H = SUMPRODUCT(C,G)/SUM(C)

[2] Post-RADV relative risk is calculated using a simplified formula

In our mock-up market, we show three issuers with varying market share and risk profiles. Relative risk shown in the example above is simplified for illustrative purpose and is calculated using plan liability risk scores (PLRS) only. Actual calculation is more complex.[22] In this example, we note that Issuer A and Issuer C had error rates based on their RADV results (-6.0% and +8.0% respectively). This resulted in a market average error rate of 3.4%. Then, we estimated post-RADV relative risk using a simplified calculation.[23]

As shown in column L of the above exhibit, RADV results can significantly impact an issuer's risk transfer results. The change in risk transfers range from -4.7% to 10.8% for issuers in this mock-up market. Further, we note that Issuer B had their risk transfers adjusted by 3.5% of statewide average premium despite their own RADV results yielding a 0% error rate. The illustration above is simplified but highlights a key point – even if an issuer error has a 0% error rate, risk adjustment transfers can still be affected by a significant amount if at least one issuer within its market is adjusted through RADV.

[22] The actual formula to calculate relative risk is as follows: $$1 + \left[\frac{PLRS_i \times IDF_i \times GCF_i}{\sum_i (s_i \times PLRS_i \times IDF_i \times GCF_i)} - \frac{AV_i \times ARF_i \times IDF_i \times GCF_i}{\sum_i (s_i \times AV_i \times ARF_i \times IDF_i \times GCF_i)}\right].$$

[23] We expect CMS to ultimately use the issuer error rate from RADV to adjust issuer PLRS at each plan ID and rating area level for that HIOS.

Appendix B – Wakely 2017 RADV Study vs Actual 2017 CMS Results

Market Error Rates

A table comparing the estimated market error rate sign (negative, 0, or positive) compared to the actual market sign released by CMS is presented below. Wakely correctly estimated the market error rate sign for 54 out of 62 markets in 2017 (Massachusetts was excluded from this table since 2017 RADV was a pilot year).

Table B.1 – Comparison of Wakely & CMS 2017 Market Error Rate Signs

		2017 CMS			
	Error Rate	Negative	Zero	Positive	Percent Classified Correctly
2017 Wakely	**Negative**	**18**	2	1	86%
	Zero	1	**28**	0	97%
	Positive	1	3	**8**	67%

National Confidence Intervals

Wakely's 2017 national confidence interval estimates compared to CMS' final 2017 estimates are presented below. Despite not having full national participation, Wakely's national mean benchmark estimates in 2017 were very close to the final averages released by CMS with differences of about 0.6% or less. Similarly, Wakely's estimates for the three HCC Group confidence interval bounds were in line with CMS' final results and differed by approximately 1% or less.

Table B.2 – Comparison of Wakely & CMS 2017 National Confidence Interval

Wakely 2017 Failure Rate National CI				Wakely 2017 - CMS 2017		
HCC Group	Mean	Lower Bound	Upper Bound	Mean	Lower Bound	Upper Bound
Low	5.39%	-13.25%	24.04%	0.64%	1.05%	0.22%
Medium	15.68%	-3.05%	34.41%	0.20%	0.90%	-0.51%
High	26.16%	4.82%	47.49%	-0.04%	-0.53%	0.44%