TO: Johanna Fabian-Marks

Director, Policy and Plan Management

Maryland Health Benefit Exchange (MHBE)

FROM: Mr. Bradley Boban, A.S.A., M.A.A.A.

Senior Actuary

Mr. Todd Switzer, A.S.A., M.A.A.A.

Chief Actuary

Maryland Insurance Administration (MIA)

Office of the Chief Actuary (OCA)

DATE: March 12, 2020

RE: Proposed "Hybrid" Dampening Approach

On October 10, 2019 the MHBE released a Program Update & Guidance Document regarding the State Reinsurance Program (SRP). On pages 6-7 was a discussion of the dampening factor methodology, which is intended to adjust for the interaction between the SRP and the federal Risk Adjustment (RA) program. It describes that in 2019 and 2020, claims-based approaches which stratified members by claims were used, but for 2021 the MHBE was proposing an alternative risk-based approach which stratified members by plan liability risk score. This alternative risk-based approach was modeled by Lewis & Ellis (L&E) in their September 12, 2019 "2020 State Analysis for the State Reinsurance Program" report to the MHBE, which showed that despite the MIA's prior expectation that the claims-based and risk-based approach would give consistent results (since the initial claims-based analysis used "high claimants" as a proxy for risk adjustment receivers), the two approaches actually produced a surprisingly disparate set of results. At that time, the OCA requested detailed data from L&E which subdivided the modeled data by both claims and risk level simultaneously, to better understand what was causing the divergent results.

Upon analyzing this more detailed data, the MIA believes that both the claims-based approach and the risk-based approach have their separate imperfections, and that a hybrid approach which combines both claims and plan liability risk score (PLRS) would be the most appropriate approach to develop the dampening factor. The

basic rationale behind this is that the SRP is fundamentally predicated solely upon actual claims, regardless of predicted risk while the RA program is fundamentally predicated solely on risk, regardless of actual claims. To appropriately measure the interaction between the two programs, both claims and risk level must be taken into account.

To explain this in more detail, the population can be divided into four broad cohorts based on SRP/RA status.

Cohort 1 are those with below average PLRS (meaning they pay into the RA program) and claims under $20,000. This comprises the majority of the population, approximately 82.4%. This cohort pays into the RA program and receives no SRP payment.

Cohort 2 are those with below average PLRS but with claims over $20,000. These are members who were predicted to have low claims but actually had very high claims. An example would be an otherwise healthy member who had a traumatic injury such as a car accident which required surgery and hospitalization. Only 1.0% of the population falls in this category. This cohort receives a payment from the SRP, while paying into RA.

Cohort 3 are those with above average PLRS (meaning they receive payments from the RA program) but with low/moderate claims below the $20,000 attachment point of the SRP. Approximately 11.8% of members fall in this category. This cohort receives a payment from the RA, but not a payment from the SRP.

Cohort 4 is those with above average PLRS and with claims over the $20,000 attachment point. This cohort receives payments from both the RA program and from the SRP, and comprises approximately 4.8% of total membership.

Equalizing the loss ratios of Cohort 1 and Cohort 4 is the goal under the hybrid method. Cohort 1 is the cohort which is overpaying into the RA program and Cohort 4 is the cohort which is receiving a “double payment” from both the RA and the SRP driving its loss ratio negative.

Cohort 2 is excluded from the goal because these are members whose claims are unpredictably high, and they receive direct benefit from the SRP but are not being “double paid,” since they make payments into the RA program (They are technically overpaying slightly into the RA program, but the magnitude is nominal compared to the magnitude of the reinsurance payments being received, so can be ignored.) This cohort is always going to be a very small portion of the population and lead to very high losses. Members are unlikely to be in Cohort 2 for multiple years in a row, rather those in Cohort 2 are likely to revert to the mean the following year and move back into Cohort 1 while a small percent of Cohort 1 members will move up into Cohort 2. This unpredictable risk that a small portion of members predicted to be healthy will actually have extremely high claims is the core insurable risk that the carriers are in the business of providing, and the SRP is already removing some of this risk from the carriers and transferring it to the State. Note that approximately 7.5% of total reinsurance payments are projected to be paid to this cohort.

Cohort 3 is excluded from the goal because these are members with high predicted risk but with low to moderate actual claims cost. This cohort receives one payment from the RA but none from the SRP, so are not being “double paid." This cohort is very profitable both with no SRP or with an undampened SRP because the RA program currently transfers more than actual claims cost. This is more of a feature than a flaw with respect

to the SRP. This gives carriers the incentive to attract members with high predicted risk and to provide the best possible care management practices to keep them below the reinsurance threshold. Just like with Cohort 1 and Cohort 2, there will be a lot of movement between Cohort 3 and Cohort 4 from year to year. A 55-year-old diabetic taking insulin is going to be in Cohort 3 most years: their PLRS will be above 1.5 and they will be receiving risk adjustment payments, but the claims cost in most claims years will be below $20,000. But, that member has the potential to transition from Cohort 3 to Cohort 4 in years where there is an expensive acute event, such as a hospitalization with an amputation. Just like with Cohort 2, the member is unlikely to have an acute event generating $20,000 of claims for two years in a row, so each year there are going to be members reverting to the mean from Cohort 4 back to Cohort 3 while other members have acute events and transition from Cohort 3 to Cohort 4. But, unlike the transitions between Cohort 1 and Cohort 2 which are random and unpredictable, the probability of these transitions can be meaningfully impacted by the carriers by implementing the best care management practices possible. The fact that Cohort 3's loss ratio stays negative even after dampening gives a large financial incentive for carriers to both attract sicker than average members and provide good care management to prevent costly acute events that would move the member into the less profitable Cohort 4 and trigger reinsurance payments from the SRP.

Before moving on to the comparison of the 3 methods, there is one technical change that the OCA advocates regardless of which method is ultimately chosen. The previous analyses by both Wakely and L&E used an "Undampened Risk Adjustment, No Reinsurance" population that was smaller than the actual projected "With Reinsurance" populations. In the L&E report, there were 2,255,196 total projected member months assumed without reinsurance and 2,348,919 projected member months with reinsurance, an approximately 5.3% lapse rate. Modeling the lapses that would have occurred with no reinsurance program IS an essential part of the core 1332 modeling and is essential in estimating federal pass-through dollars. But with respect to computing the dampening factor, the OCA believes that it is more appropriate for the "No Reinsurance" scenario to reflect the entire 2,348,919 member months that are projected to actually be enrolled with reinsurance. Because the dampening factor is trying to adjust for the interaction that is actually occurring between the RA and SRP, the counterfactual base scenario should project what would happen for the entire enrolled membership if only RA were in place. Then layering on the impact of the SRP to this static population will show the true extent of the interaction for all members who will be impacted by the two programs in 2020, without excluding those who would have lapsed had the program not been in place.

Using projected 2020 claims data provided by L&E which ties to their report, the loss ratios for these four cohorts pre-reinsurance is as follows (Cohorts 1 and 3 have been subdivided into below and above $2,900. This is so that the claims-based method can be replicated.) All tables in this report are available in the Excel file posted with this document at https://www.marylandhbe.com/policy-legislation/public-comment/. All interested parties are encouraged to thoroughly review the Excel file to ensure that the presentation of the various methodologies is clear and accurate.

1) Undampened Risk Adjustment, No Reinsurance

	% Members	Member Months	Claims	Premium	Raw Loss Ratio	RA Transfer	Reins	Adjusted Loss Ratio	
Cohort 1a (PLRS > 1.5, Claims <$2,900)	68.8%	1,615,254	$120,133,379	$930,890,646	13%	($630,167,076)		81%	
Cohort 1b (PLRS <1.5, Claims $2,900 - $20k)	13.6%	320,083	$176,242,351	$232,322,927	76%	($132,282,368)		133%	
Cohort 1 (RA Payer, No Reins)	**82.4%**	**1,935,337**	**$296,375,730**	**$1,163,213,573**	25%	**($762,449,444)**		**91%**	
Cohort 2 (RA Payer, Reins Receiver)	**1.0%**	**23,959**	**$85,994,079**	**$18,371,077**	468%	**($8,609,864)**		**515%**	
Cohort 3a (PLRS>1.5, Claims < $2,900)	4.7%	111,317	$16,119,530	$86,798,517	19%	$75,781,334		-69%	
Cohort 3b (PLRS >1.5, Claims $2,900 - $20k)	7.1%	166,101	$133,004,000	$144,053,433	92%	$188,297,435		-38%	(Cohort 4 vs 1)
Cohort 3 (RA Receiver, No Reins)	**11.8%**	**277,418**	**$149,123,529**	**$230,851,950**	65%	**$264,078,769**		**-50%**	Δ
Cohort 4 (RA Receiver, Reins Receiver)	**4.8%**	**112,205**	**$736,391,640**	**$103,545,400**	711%	**$506,980,539**		**222%**	130.5%
TOTAL	**100.0%**	**2,348,919**	**$1,267,884,979**	**$1,515,982,000**	**84%**	**($0)**		**84%**	
RA Payers	83.4%	1,959,296	$382,369,809	$1,181,584,650	32%	($771,059,308)		98%	Δ
RA Receivers	16.6%	389,622	$885,515,169	$334,397,350	265%	$771,059,308		34%	-63.4%
TOTAL	**100.0%**	**2,348,919**	**$1,267,884,979**	**$1,515,982,000**	**84%**	**($0)**		**84%**	
Low Claims (<$2,900)	73.5%	1,726,571	$136,252,909	$1,017,689,163	13%	($554,385,742)		68%	Δ
High Claims (>$2,900)	26.5%	622,348	$1,131,632,070	$498,292,837	227%	$554,385,742		116%	48.0%
TOTAL	**100.0%**	**2,348,919**	**$1,267,884,979**	**$1,515,982,000**	**84%**	**($0)**		**84%**	

Prior to reinsurance, these 4 cohorts exhibit a wide range of profitability patterns. Cohort 2 is extremely unprofitable with a 515% loss ratio with Cohort 4 not far behind at 222%. Cohort 3 is extremely profitable with a -50% loss ratio (meaning the RA program is transferring $1.50 in payment for every $1 of claims). Cohort 1 is moderately unprofitable, with a loss ratio of 91%. When rolling things up, the risk-based analysis shows that RA receivers in aggregate have a significantly lower loss ratio than payers (a 63.4% difference in loss ratios). The claims-based analysis shows that those with low claims have significantly better loss ratios (48.0% difference).

These disparate loss ratios show that the federal RA program is not working entirely as intended. CMS is aware of this problem and is working to improve the accuracy of the RA program, as noted in the proposed 2021 Notice of Benefit and Payment Parameters: "In the 2018 Payment Notice, we stated that based on the commercial MarketScan®data, the HHS risk adjustment models slightly under-predict risk for low-cost enrollees and slightly over-predict risk for high-cost enrollees. More precisely, the current HHS-HCC models under predict for enrollees without HCCs, slightly over-predict for enrollees with low HCC counts and under predict for enrollees with the highest HCC counts." And "Therefore, in this rule, we outline and solicit comment on the different options that we continue to consider to improve the models' predictive ability for certain subgroups of enrollees in light of experience and currently available information."

If the SRP program were implemented with no dampening factor, the loss ratios would become:

2) Undampened Risk Adjustment, With Reinsurance

	Member Months	Claims	Premium	Raw Loss Ratio	RA Transfer	Reinsurance	Adjusted Loss Ratio	
Cohort 1a (PLRS > 1.5, Claims <$2,900)	1,615,254	$120,133,379	$689,246,567	17%	($481,375,628)		87%	
Cohort 1b (PLRS <1.5, Claims $2,900 - $20k)	320,083	$176,242,351	$170,801,775	103%	($99,637,370)		162%	
Cohort 1 (RA Payer, No Reins)	**1,935,337**	**$296,375,730**	**$860,048,342**	34%	($581,012,998)		**102%**	
Cohort 2 (RA Payer, Reins Receiver)	**23,959**	**$85,994,079**	**$12,635,540**	681%	($6,281,027)	**$31,448,459**	**481%**	
Cohort 3a (PLRS>1.5, Claims < $2,900)	111,317	$16,119,530	$63,207,971	26%	$59,902,929		-69%	
Cohort 3b (PLRS >1.5, Claims $2,900 - $20k)	166,101	$133,004,000	$104,148,087	128%	$147,226,561		-14%	(Cohort 4 vs 1)
Cohort 3 (RA Receiver, No Reins)	**277,418**	**$149,123,529**	**$167,356,058**	89%	$207,129,490		**-35%**	Δ
Cohort 4 (RA Receiver, Reins Receiver)	**112,205**	**$736,391,640**	**$70,143,863**	1050%	$380,164,536	**$381,392,376**	**-36%**	-137.9%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	
RA Payers	1,959,296	$382,369,809	$872,683,883	44%	($587,294,026)	$31,448,459	108%	Δ
RA Receivers	389,622	$885,515,169	$237,499,921	373%	$587,294,026	$381,392,376	-35%	-142.5%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	
Low Claims (<$2,900)	1,726,571	$136,252,909	$752,454,538	18%	($421,472,699)		74%	Δ
High Claims (>$2,900)	622,348	$1,131,632,070	$357,729,265	316%	$421,472,699	$412,840,835	83%	9.0%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	

An undampened SRP would negatively impact Cohort 1 by increasing the loss ratio from 91% to 102%, resulting in Cohort 1 overpaying into risk adjustment with no dampening factor. Cohort 2 sees its loss ratio drop from 515% to 481% as it benefits directly from reinsurance. Cohort 3 has its loss ratio increase from -50% to -35%, still receiving more risk adjustment than is paid out in claims dollars. Cohort 4 is the cohort that receives the bulk of reinsurance dollars and benefits the most, by having the loss ratio drop from 222% to -36%. This illustrates the "double payment" from RA and the SRP.

Under the claims-based method which is in place for 2020, a dampening factor of 0.7755 would be needed.[1] This would be derived by segmenting membership between low claimants (<$2,900) and high claimants (>$2,900) and then restoring the original 48.0% differential in profitability that the RA program by itself results in. Note that the L&E report derived a factor of 0.785 (21.5% dampening). As addressed above, this difference is due to L&E normalizing back to the RA results of a smaller (and sicker) population that would be expected with the higher premiums if the SRP didn't exist.

3) Claims-Based Method, Dampening factor of 0.7755	Member Months	Claims	Premium	Loss Ratio	RA Transfer	Reinsurance	Loss Ratio	
Cohort 1a (PLRS > 1.5, Claims <$2,900)	1,615,254	$120,133,379	$689,246,567	17%	($373,306,799)	$0	72%	
Cohort 1b (PLRS <1.5, Claims $2,900 - $20k)	320,083	$176,242,351	$170,801,775	103%	($77,268,781)	$0	148%	
Cohort 1 (RA Payer, No Reins)	**1,935,337**	**$296,375,730**	**$860,048,342**	34%	**($450,575,580)**	**$0**	**87%**	
Cohort 2 (RA Payer, Reins Receiver)	**23,959**	**$85,994,079**	**$12,635,540**	681%	**($4,870,937)**	**$31,448,459**	**470%**	
Cohort 3a (PLRS>1.5, Claims < $2,900)	111,317	$16,119,530	$63,207,971	26%	$46,454,721	$0	-48%	
Cohort 3b (PLRS >1.5, Claims $2,900 - $20k)	166,101	$133,004,000	$104,148,087	128%	$114,174,198	$0	18%	(Cohort 4 vs 1)
Cohort 3 (RA Receiver, No Reins)	**277,418**	**$149,123,529**	**$167,356,058**	89%	**$160,628,919**	**$0**	**-7%**	Δ
Cohort 4 (RA Receiver, Reins Receiver)	**112,205**	**$736,391,640**	**$70,143,863**	1050%	**$294,817,598**	**$381,392,376**	**86%**	-1.1%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	
RA Payers	1,959,296	$382,369,809	$872,683,883	44%	($455,446,517)	$31,448,459	92%	Δ
RA Receivers	389,622	$885,515,169	$237,499,921	373%	$455,446,517	$381,392,376	20%	-71.9%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	
Low Claims (<$2,900)	1,726,571	$136,252,909	$752,454,538	18%	($326,852,078)		62%	**Δ**
High Claims (>$2,900)	622,348	$1,131,632,070	$357,729,265	316%	$326,852,078	$412,840,835	110%	**48.0%**
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	

Under the risk-based method (which was initially proposed for 2021), a dampening factor of 0.7485 would be needed for 2020. This would be derived by segmenting membership between RA Payers (<1.5 PLRS) and RA Receivers (>1.5 PLRS) and then restoring the original 63.4% differential in profitability that the RA program by itself would yield. Note that the L&E report derived a factor of 0.75 (25% dampening). As addressed above, this difference is due to L&E normalizing back to the RA results of a smaller population that would be expected with the higher premiums if the SRP didn't exist.

[1] Note that the actual final dampening factor for 2020 is 0.785. The 2020 dampening factors described in this report are provided as examples of the dampening factors that would be yielded by the various methodologies described, using the static post-reinsurance population as the baseline.

4) Risk Based Method, Dampening factor of 0.7485	Member Months	Claims	Premium	Raw Loss Ratio	RA Transfer	Reinsurance	Adjusted Loss Ratio	
Cohort 1a (PLRS > 1.5, Claims <$2,900)	1,615,254	$120,133,379	$689,246,567	17%	($360,309,658)	$0	70%	
Cohort 1b (PLRS <1.5, Claims $2,900 - $20k)	320,083	$176,242,351	$170,801,775	103%	($74,578,572)	$0	147%	
Cohort 1 (RA Payer, No Reins)	**1,935,337**	**$296,375,730**	**$860,048,342**	34%	**($434,888,229)**	**$0**	**85%**	
Cohort 2 (RA Payer, Reins Receiver)	**23,959**	**$85,994,079**	**$12,635,540**	681%	**($4,701,349)**	**$31,448,459**	**469%**	
Cohort 3a (PLRS>1.5, Claims < $2,900)	111,317	$16,119,530	$63,207,971	26%	$44,837,342	$0	-45%	
Cohort 3b (PLRS >1.5, Claims $2,900 - $20k)	166,101	$133,004,000	$104,148,087	128%	$110,199,081	$0	22%	(Cohort 4 vs 1)
Cohort 3 (RA Receiver, No Reins)	277,418	$149,123,529	$167,356,058	89%	$155,036,423	$0	-4%	Δ
Cohort 4 (RA Receiver, Reins Receiver)	112,205	$736,391,640	$70,143,863	1050%	$284,553,155	$381,392,376	100%	15.4%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,277,539,861**	**99%**	**$155,036,423**	**$412,840,835**	**55%**	
RA Payers	1,959,296	$382,369,809	$872,683,883	44%	($439,589,578)	$31,448,459	91%	**Δ**
RA Receivers	389,622	$885,515,169	$237,499,921	373%	$439,589,578	$381,392,376	27%	**-63.4%**
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	
Low Claims (<$2,900)	1,726,571	$136,252,909	$752,454,538	18%	($315,472,315)		60%	Δ
High Claims (>$2,900)	622,348	$1,131,632,070	$357,729,265	316%	$315,472,315	$412,840,835	113%	52.7%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	

The hybrid method would bring the difference between Cohort 1 and Cohort 4 loss ratios to 0%. Under this method, a factor of 0.7737 would be derived for 2020, as shown in the table below.

5) Hybrid Method, Dampening factor of 0.7737	Member Months	Claims	Premium	Raw Loss Ratio	RA Transfer	Reinsurance	Adjusted Loss Ratio	
Cohort 1a (PLRS > 1.5, Claims <$2,900)	1,615,254	$120,133,379	$689,246,567	17%	($372,440,323)	$0	71%	
Cohort 1b (PLRS <1.5, Claims $2,900 - $20k)	320,083	$176,242,351	$170,801,775	103%	($77,089,434)	$0	148%	
Cohort 1 (RA Payer, No Reins)	**1,935,337**	**$296,375,730**	**$860,048,342**	34%	**($449,529,757)**	**$0**	**87%**	
Cohort 2 (RA Payer, Reins Receiver)	**23,959**	**$85,994,079**	**$12,635,540**	681%	**($4,859,631)**	**$31,448,459**	**470%**	
Cohort 3a (PLRS>1.5, Claims < $2,900)	111,317	$16,119,530	$63,207,971	26%	$46,346,896	$0	-48%	
Cohort 3b (PLRS >1.5, Claims $2,900 - $20k)	166,101	$133,004,000	$104,148,087	128%	$113,909,190	$0	18%	(Cohort 4 vs 1)
Cohort 3 (RA Receiver, No Reins)	**277,418**	**$149,123,529**	**$167,356,058**	89%	**$160,256,086**	**$0**	**-7%**	**Δ**
Cohort 4 (RA Receiver, Reins Receiver)	**112,205**	**$736,391,640**	**$70,143,863**	1050%	**$294,133,301**	**$381,392,376**	**87%**	**0.0%**
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,277,539,861**	**99%**	**$160,256,086**	**$412,840,835**	**54%**	
RA Payers	1,959,296	$382,369,809	$872,683,883	44%	($454,389,388)	$31,448,459	92%	Δ
RA Receivers	389,622	$885,515,169	$237,499,921	373%	$454,389,388	$381,392,376	21%	-71.3%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	
Low Claims (<$2,900)	1,726,571	$136,252,909	$752,454,538	18%	($326,093,427)		61%	Δ
High Claims (>$2,900)	622,348	$1,131,632,070	$357,729,265	316%	$326,093,427	$412,840,835	110%	48.3%
TOTAL	**2,348,919**	**$1,267,884,979**	**$1,110,183,803**	**114%**	**($0)**	**$412,840,835**	**77%**	

This result is very close to the claims-based method for this particular projection. However, the two methods are different in mechanics and do not inherently converge to the same answer. High claimants >$2,900 are spread across all four cohorts as defined by the hybrid method and low claimants <$2,900 are spread across Cohorts 1 and Cohort 3. When the analysis is next performed using 2019 claims data projected forward to a 2021 RA/SRP year, the two methods are not expected to result in such close dampening factors.