



Date: May 14, 2024

RE: 2022 Benefit Year HHS Risk Adjustment Data Validation (HHS-RADV) Results

The Centers for Medicare & Medicaid Services (CMS) is making available summary information on issuers' 2022 benefit year HHS-RADV results. The 2022 benefit year HHS-RADV error rates will be applied to 2022 benefit year plan liability risk scores and risk adjustment state transfers.¹ The 2022 benefit year HHS-RADV adjustments to 2022 benefit year risk adjustment state transfers will be released by the end of May 2024.² This memo contains an overview of the 2022 benefit year HHS-RADV error rate methodology, a summary of the 2022 benefit year HHS-RADV results, and information to assist issuers in understanding their results.³

1. Overview of the 2022 Benefit Year HHS-RADV Error Estimation Methodology

The 2022 benefit year HHS-RADV error estimation methodology remains largely the same as the 2021 benefit year HHS-RADV error estimation methodology, which was finalized in the 2023 Payment Notice⁴ and the 2024 Payment Notice.⁵ However, as announced in the 2024 Payment Notice, beginning with benefit year 2022, the Lifelong Permanent Condition (LLPC) list and the policy permitting the use of Non-EDGE Claims (NECs) in HHS-RADV were discontinued.⁶ The LLPC list and NEC policies were adopted in the early years of HHS-RADV to help simplify and streamline the process as issuers gained experience with the HHS-RADV Protocols and addressed any lingering challenges with the EDGE data submission process. These policies were discontinued beginning with the 2022 benefit year to reflect that issuers are now sufficiently familiar with these operations and to better align HHS-RADV guidance with the EDGE Server Business Rules.

For further information on the 2022 benefit year HHS-RADV error estimation methodology and the incorporation of all policy components (including the changes indicated above and other unchanged

¹ See the Amendments to the HHS-Operated Risk Adjustment Data Validation (HHS-RADV) Under the Patient Protection and Affordable Care Act's HHS-Operated Risk Adjustment Program Final Rule; 85 FR 76979 at 77002-77005 (December 1, 2020) (2020 HHS-RADV Amendments Rule).

² See Table 4 in the Key Dates for Calendar Year 2024 document for information on the updated timing of the Summary Report of 2022 Benefit Year Risk Adjustment Data Validation Adjustments to Risk Adjustment Transfers at <https://www.cms.gov/files/document/final-cy24-key-dates-tables.pdf>.

³ Issuers who participated in 2022 benefit year HHS-RADV will receive issuer-specific and enrollee-specific results in the HHS-RADV Audit Tool at the same time this memo is released. Issuers will also receive the 2022 benefit year issuer-specific demographic and enrollment (D&E) and specific prescription drug (RXC) letters and reports in the Audit Tool in May 2024.

⁴ See the Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2023; 87 FR 27208 (May 6, 2022) (2023 Payment Notice).

⁵ See the Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2024; 88 FR 25740 (April 27, 2023) (2024 Payment Notice).

⁶ *Id.* at 25790 through 25796.

policy components), refer to the 2022 Benefit Year HHS-RADV Protocols.⁷

2. Highlights of the 2022 Benefit Year HHS-RADV Results

In this section, CMS provides a high-level summary of the major trends identified in the 2022 benefit year HHS-RADV results.

Key Finding #1: Issuer participation was higher in 2022 benefit year HHS-RADV than 2021 benefit year HHS-RADV, primarily due to more issuers offering risk adjustment covered plans.

In the 2022 benefit year, 463 out of the 606 issuers with risk adjustment covered plans participated in HHS-RADV, while in 2021, 407 out of the 571 issuers with risk adjustment covered plans participated in HHS-RADV. Thus, the proportion of issuers with risk adjustment covered plans participating in HHS-RADV rose in 2022, reaching 76.4 percent, compared to 71.3 percent in 2021.

Key Finding #2: There were several highly miscoded HCCs in 2022 benefit year HHS-RADV that have also been highly miscoded in prior benefit years.

In the 2022 benefit year SVA findings, CMS identified several HCCs that were most frequently unvalidated in issuers' IVA (or SVA, as applicable) results. The most miscoded HCCs for SVA-reviewed sampled enrollees in the 2022 benefit year are noted in Table 1. Conditions such as diabetes with chronic complications and specified heart arrhythmias continued to be highly miscoded, as seen in prior HHS-RADV audit years.⁸ Note that none of the most miscoded HCCs in the 2022 benefit year were on the 2021 benefit year LLPC list.

Table 1: 2022 BY Commonly Miscoded Single HCCs Among SVA-Reviewed Sample Enrollees⁹

HCC	HCC Name	EDGE HCC Frequency	IVA HCC Frequency	SVA HCC Frequency	Coding Clinic Guidance
11	Colorectal, Breast (Age < 50), Kidney, and Other Cancers	99	80	58	Coding Clinic, 3rd Quarter, 2009, pages: 3-4 (Herceptin Maintenance) Coding Clinic, 2nd Quarter, 2012, page: 9 (Cancer Staging Information)
20	Diabetes with Chronic Complications	679	670	637	Coding Clinic, 2nd Quarter, 2016, pages: 36-37 (Diabetes and associated conditions clarification)

⁷ See the 2022 Benefit Year ACA HHS Risk Adjustment Data Validation (HHS-RADV) Protocols (May 19, 2023) (2022 Benefit Year HHS-RADV Protocols) available at: https://regtap.cms.gov/uploads/library/HHS-RADV_2022_Benefit_Year_Protocols_5CR_051923.pdf.

⁸ See the 2021 Benefit Year Department of Health and Human Services Risk Adjustment Data Validation (HHS-RADV) Results Memo (June 13, 2023) available at: <https://www.cms.gov/files/document/by21-radv-results-memo.pdf>.

⁹ Note that this table is provided at the single HCC level, rather than the de-duplicated Super HCC level.

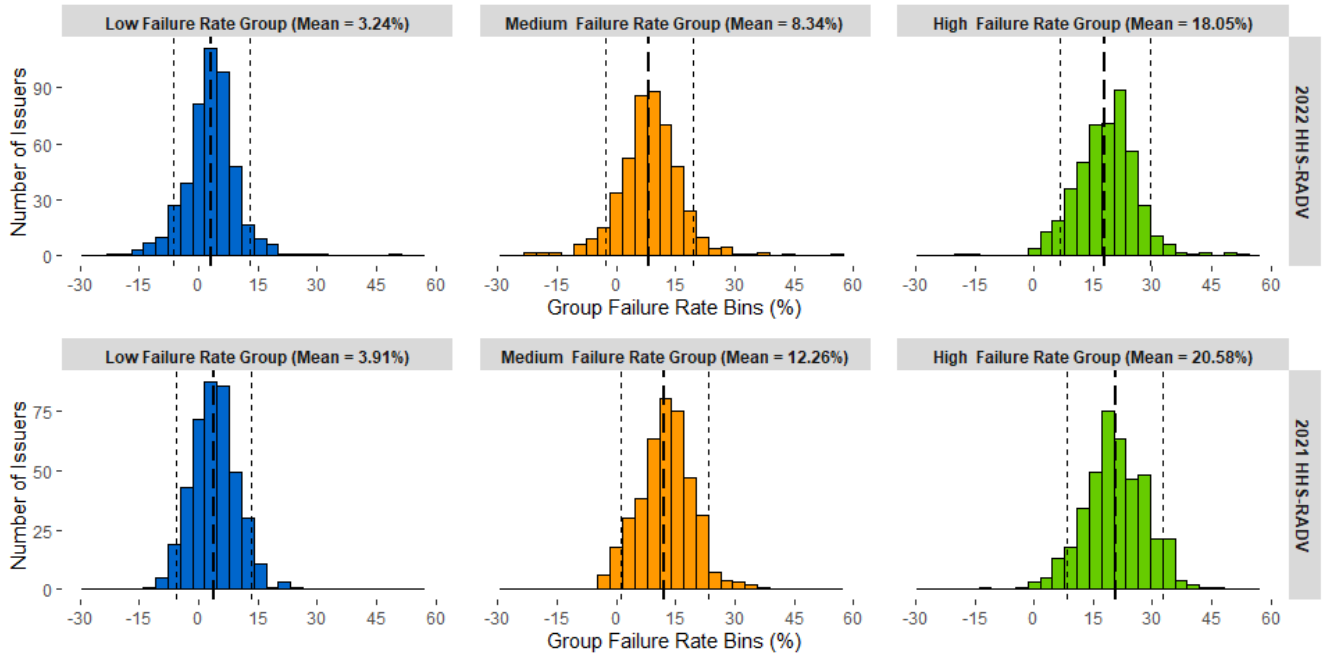
HCC	HCC Name	EDGE HCC Frequency	IVA HCC Frequency	SVA HCC Frequency	Coding Clinic Guidance
139	Atrial and Ventricular Septal Defects, Patent Ductus Arteriosus, and Other Congenital Heart/Circulatory Disorders	95	78	62	Coding Clinic, 4th Quarter, 2010, page: 136 (Repaired Congenital Anomaly)
142	Specified Heart Arrhythmias	566	549	527	Official Guidelines for Coding and Reporting, Section IV., J. and Coding Clinic, 4th Quarter, 2008, pages: 305-306 (Additional Diagnoses Reporting Guidelines)
160	Chronic Obstructive Pulmonary Disease, Including Bronchiectasis	473	460	434	Coding Clinic, 3rd Quarter, 2007, pages: 13-14 (Coding of Chronic Conditions – Clarification)

Key Finding #3: National program benchmarks between the 2022 benefit year and 2021 benefit year HHS-RADV continue to be generally stable.

The national weighted mean and the standard deviation of the group failure rates (low, medium, and high) remained largely consistent across both benefit years.¹⁰ Figure 1 compares the distributions of the failure rate groups in the 2021 and 2022 benefit years of HHS-RADV. The weighted mean for all three failure rate groups experienced a decrease between the two years. Specifically, the medium failure rate group observed the largest decrease of 3.92 percent, followed by the high failure rate group with a decrease of 2.53 percent. Furthermore, for all three failure rate groups, the group failure rate was lower for the 2022 benefit year than for any other previous benefit year. This could be attributed to the increased accuracy of EDGE-reported HCCs, which leads to improved validation outcomes in HHS-RADV.

¹⁰ See Appendix A for additional detail.

Figure 1: Distribution of Group Failure Rates Across 2022 Benefit Year and 2021 Benefit Year HHS-RADV



Key Finding #4: The total count of outlier issuers rose with greater issuer participation in the 2022 benefit year HHS-RADV, though the proportion of outliers slightly decreased.

The 2022 benefit year of HHS-RADV had a slightly smaller proportion of issuers identified as outliers than the 2021 benefit year. As shown in Table 2, 21 percent of issuers in the 2022 benefit year HHS-RADV are outliers, compared to 22 percent in the 2021 benefit year. The proportion of negative error rate outliers increased to 13 percent in the 2022 benefit year HHS-RADV from 11 percent in the 2021 benefit year. The proportion of positive error rate outliers decreased to 8 percent in the 2022 benefit year HHS-RADV from 11 percent in the 2021 benefit year.

Table 2: Outlier Issuers Across Benefit Years

RADV Year	All Issuers Participating in HHS-RADV	Number of Issuers with Zero Error Rates	Number of Issuers with non-Zero Error Rates	Number of Issuers with Negative Error Rates	Number of Issuers with Positive Error Rates	Percent of Issuers with Zero Error Rates	Percent of Issuers with Negative Error Rates	Percent of Issuers with Positive Error Rates
2022 HHS-RADV Results	463	367	96	58	38	79%	13%	8%
2021 HHS-RADV Results	407	316	91	46	45	78%	11%	11%

Key Finding #5: Between 2021 benefit year HHS-RADV and 2022 benefit year HHS-RADV, the dispersion of outliers increased.

Table 3a and 3b provide a closer look at how outlier issuers were dispersed around the national mean in each failure rate group in the 2021 and 2022 benefit years of HHS-RADV. In the 2022 benefit year, 90.8 percent of outliers fell between 1.645 and 3 standard deviations of the weighted mean failure rate for the failure rate group, and 9.2 percent of outliers fell outside of 3 standard deviations of the weighted mean failure rate for the failure rate group. In the 2021 benefit year of HHS-RADV, a larger proportion of outliers (92.5 percent) fell within 1.645 and 3 standard deviations of the weighted mean failure rate for the failure rate group and a smaller proportion of outliers (7.5 percent) fell outside of 3 standard deviations of the weighted mean failure rate for the failure rate group.

Table 3a: Outlier Counts by Outlier Identification Threshold (Number of Outliers)

Failure Rate Group	Within 1.645 and 3 SD – BY21	Outside 3 SD – BY21	Total – BY21	Within 1.645 and 3 SD – BY22	Outside 3 SD – BY22	Total – BY22
Low	28	3	31	43	4	47
Medium	33	4	37	45	5	50
High	50	2	52	40	4	44
Total	111	9	120	128	13	141

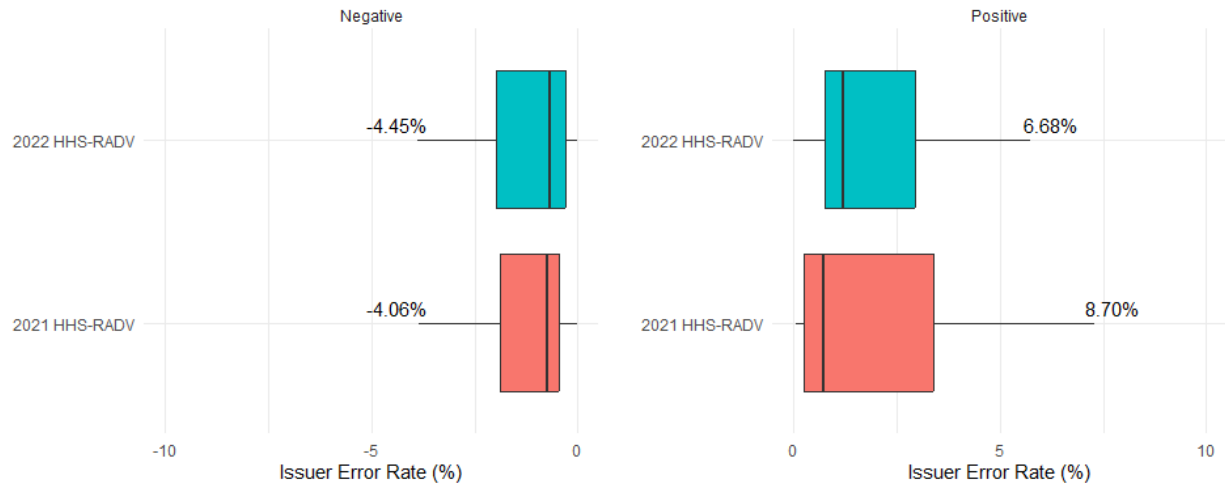
Table 3b: Outlier Counts by Outlier Identification Threshold (Proportion of Outliers)

Failure Rate Group	Within 1.645 and 3 SD – BY21	Outside 3 SD – BY21	Total – BY21	Within 1.645 and 3 SD – BY22	Outside 3 SD – BY22	Total – BY22
Low	90.3%	9.7%	100.0%	91.5%	8.5%	100.0%
Medium	89.2%	10.8%	100.0%	90.0%	10.0%	100.0%
High	96.2%	3.8%	100.0%	90.9%	9.1%	100.0%
Total	92.5%	7.5%	100.0%	90.8%	9.2%	100.0%

Key Finding #6: The magnitude of positive error rates for issuers with high error rate values has decreased.

Figure 2 illustrates the distribution of errors rates for the 2021 and 2022 benefit years of HHS-RADV. Compared to the 2021 benefit year, the left tail of the negative error rate distribution remained similar for the 2022 benefit year, while the right tail of the positive error rate distribution decreased substantially between the two benefit years. This indicates a larger decrease in the magnitude of error rates for issuers with high values on the positive end of the distribution than for issuers with high values on the negative end.

Figure 2: Distribution of Error Rates Across 2021 and 2022 HHS-RADV Benefit Years¹¹



Key Finding #7: The number of state market risk pools being impacted in 2022 benefit year HHS-RADV is similar to the number impacted in 2021 benefit year HHS-RADV.

In 2022 benefit year HHS-RADV, the identification of outliers impacted 34 states’ individual market non-catastrophic risk pools, 35 states’ small group market risk pools, and 20 states’ catastrophic risk pools.

Table 4: State Market Risk Pools Being Impacted Across Benefit Years

HHS-RADV Year	Individual (Excluding Catastrophic)	Small Group	Catastrophic
2022 HHS-RADV Results	34	35	20
2021 HHS-RADV Results	33	35	21

Key Finding #8: The validation rates of HCCs on the 2021 benefit year's LLPC list declined in 2022 HHS-RADV, but the overall validation rate of all HCCs increased.

In the 2024 Payment Notice, the LLPC list was discontinued beginning with 2022 benefit year HHS-RADV. For the 2022 benefit year HHS-RADV, HCCs that were on the 2021 benefit year LLPC list made up 8.9 percent of all HHS-RADV sampled EDGE HCCs, and the overall validation rate of 2022 benefit year HCCs on the 2021 benefit year LLPC list was 2.0 percent lower than the 2021 benefit year. The overall 2022 benefit year validation rate of all HCCs not on the 2021 benefit year LLPC list (91.1 percent of 2022 HHS-RADV sampled EDGE HCCs) was 2.0 percent higher than the 2021 benefit year. This suggests that the lower 2022 benefit year validation rate of HCCs on the 2021 benefit year LLPC

¹¹ Figure 2 illustrates the distribution of error rate values using a boxplot. The whiskers, which extend from the edge of the boxes, depict the range of error rate values excluding any extreme outliers. The tip of each whisker, as annotated in the figure, is calculated as $Q3 + 1.5 \times IQR$ for positive error rate values and calculated as $Q1 - 1.5 \times IQR$ for negative error rate values. IQR represents the interquartile range and is calculated as $Q3 - Q1$.

list could be attributed to the discontinuation of the LLPC list.

Table 5: Validation Rates of LLPC List HCCs and Non-LLPC List HCCs

HHS-RADV Year	LLPC	Non-LLPC
2022 HHS-RADV Results	81.5%	79.4%
2021 HHS-RADV Results	83.5%	77.4%

3. 2022 Benefit Year HHS-RADV Results: Key Metrics and Reports:

The HHS-RADV Audit Tool¹² provides the following documents for 2022 benefit year HHS-RADV results:¹³

- 1. “National Program Benchmarks – 2022 Benefit Year HHS-RADV (Appendix A)”**
Provides the national program benchmarks for failure rate group means and confidence intervals, and summary statistics based on all issuers’ results used to establish the national failure rate group metrics for the 2022 benefit year HHS-RADV results.
- 2. “2022 Benefit Year Risk Adjustment State Market Risk Pool Weighted Average HHS-RADV Error Rates (Appendix B)”**
Provides information that shows which state market risk pools are impacted by 2022 benefit year HHS-RADV error rates.¹⁴ State market risk pools will have 2022 benefit year risk adjustment state transfers impacted if there is at least one error rate outlier in the state market risk pool in the 2022 benefit year of HHS-RADV.
- 3. “2022 Benefit Year HHS-RADV Failure Rate Group Definitions (Appendix C)”**
Provides a listing of HCCs, the associated Super HCC, and the group detail (i.e., Low Failure Rate Group, Medium Failure Rate Group, and High Failure Rate Group) for the 2022 benefit year.
- 4. 2022 Benefit Year “Issuer Metrics” Report**
Provides issuer-specific results for the 2022 benefit year HHS-RADV on each HIOS ID’s HCC group failure rates and error rate, if applicable. This is available to issuers in the History and Results tab of the Audit Tool. Issuers with more than one HIOS ID will receive separate Issuer HCC Group Metrics Reports for each HIOS ID.
- 5. 2022 Benefit Year “Enrollee Metrics” Report**
Provides issuer-specific, enrollee-level findings for each HIOS ID’s HHS-RADV sampled enrollees’ HCCs and applicable adjustments for the 2022 benefit year HHS-RADV.¹⁵ This

¹² The HHS-RADV Audit Tool can be accessed by issuers (issuer SO, back-up SO, and RADV coordinators) at: <https://ccrms-rari.force.com/HHSRADVAuditTool/>.

¹³ IVA Entities will have access to this memo and the HHS-RADV Results Job Aid, but they will not receive issuer specific results (i.e., documents #4 - #5 in the list). Issuers may choose to share their issuer specific results with their IVA Entities.

¹⁴ We note that the state market risk pool weighted average risk score error rates account for all risk adjustment EDGE discrepancies to date. The information on impacted state market risk pools is subject to change as it does not take into account any adjustments for any potential actionable HHS-RADV discrepancies or successful HHS-RADV appeals.

¹⁵ Issuers should note that the HIOS ID’s error rate may be a zero or a non-zero rate.

is available to issuers in the History and Results tab of the Audit Tool.

To help issuers understand the results, CMS is also providing a 2022 Benefit Year HHS-RADV Results Job Aid, which includes definitions for each of the data fields in the results that will be available in the HHS-RADV Audit Tool. The 2022 Benefit Year HHS-RADV Results Job Aid includes an addendum, called “Error Rate Calculation Example,” that provides step-by-step directions for calculating an issuer’s 2022 HHS-RADV error rate.

4. Impact of HHS-RADV Error Rates and Outlier Status on 2022 Benefit Year Risk Adjustment State Transfers:

The impact of a risk score error rate on an issuer’s risk adjustment state transfers depends on whether the issuer was identified as an outlier and whether additional outliers exist in the state market risk pool. As previously mentioned, issuers’ 2022 benefit year HHS-RADV error rates will be used to adjust 2022 benefit year plan liability risk scores and risk adjustment state transfers.¹⁶

- **Zero Error Rate Issuers:** Exempt and non-outlier issuers will receive a zero error rate.
 - The majority of participating issuers’ 2022 HHS-RADV results are within the confidence intervals of the national group failure rates and thus will receive a zero error rate.
 - Zero error rate issuers will not have an adjustment made to their 2022 benefit year plan liability risk scores. However, the application of the 2022 benefit year HHS-RADV non-zero error rates to outlier issuers’ 2022 benefit year plan liability risk scores affects the state average risk score for a state market risk pool. Due to the budget neutral nature of the HHS-operated risk adjustment program, non-outlier and exempt issuers’ 2022 benefit year risk adjustment state transfers may still be subject to HHS-RADV adjustments if other issuers in their state market risk pool are identified as outliers in the 2022 benefit year of HHS-RADV.
- **Non-Zero Error Rate Issuers:** Outlier issuers will receive non-zero error rates that could be positive or negative.^{17,18}
 - If the outlier issuer’s error rate is positive, the issuer’s 2022 benefit year plan liability risk scores will be adjusted downward by the error rate. Assuming no adjustments to other issuers’ risk scores in the same state market risk pool, this would result in a higher 2022 benefit year risk adjustment charge or lower risk adjustment payment or shift the transfer amount from a payment to a charge for the outlier issuer.
 - If the outlier issuer’s error rate is negative, the issuer’s 2022 benefit year plan liability risk scores will be adjusted upwards by the error rate. Again, assuming no adjustments to other issuers’ risk scores in the same state market risk pool, this would result in a lower 2022 benefit year risk adjustment charge or higher risk adjustment payment, or shift the transfer amount from a charge to a payment for the outlier

¹⁶ See *supra* note 1.

¹⁷ Issuers with failure rates that fall outside of one or more of the failure group confidence intervals and have at least 30 Super de-duplicated HCCs in the applicable failure rate group are considered outliers.

¹⁸ As finalized in the 2024 Payment Notice, issuers who exited all markets in a state after the 2022 benefit year and who are identified as error rate outliers in 2022 benefit year HHS-RADV will have their 2022 benefit year HHS-RADV error rates applied to adjust 2022 benefit year risk scores and transfers, regardless of whether the exiting issuer is a negative or positive error rate outlier issuer. See the 2024 Payment Notice, 88 FR at 25790.

issuer.¹⁹

- As described below, we note that the magnitude and direction of 2022 benefit year transfer adjustments may change if other issuers in the state market risk pool are identified as outliers in the 2022 benefit year of HHS-RADV.

We provide the weighted average risk score error rates by state market risk pool in Appendix B so that issuers can compare this information to the data that was released in the Summary Report on Permanent Risk Adjustment Transfers for the 2022 Benefit Year.²⁰ The weighted average risk score error rates are calculated by taking the weighted average of issuers' 2022 benefit year HHS-RADV error rates for each state market risk pool, weighted by each issuer's billable member months and plan liability risk scores. To estimate the impact of averaged error rates and their HHS-RADV adjusted 2022 benefit year risk adjustment transfers, issuers can use the Appendix B data in conjunction with issuer-specific 2022 benefit year risk adjustment data, the state tables, and the payment transfer denominator amounts that were included in the Summary Report on Permanent Risk Adjustment Transfers for the 2022 Benefit Year.

To further explain Appendix B, issuers in state market risk pools with zero weighted average risk score error rates can generally expect no change to their 2022 benefit year risk adjustment transfer amount(s) as a result of HHS-RADV.²¹ For issuers in state market risk pools with non-zero weighted average risk score error rates, issuers may apply the weighted average risk score error rate to the state average risk score to help understand the HHS-RADV impact in the same manner that issuers' risk score error rates are applied to issuers' risk scores – that is, a negative weighted average risk score error rate will increase a state average risk score, while a positive average risk score error rate will decrease a state average risk score. For zero error rate issuers in state risk pools with a non-zero weighted average risk score error rate:

- In state market risk pools with a negative weighted average risk score error rate, zero error rate issuers can generally expect their charge to increase, their payment to decrease, or a shift in the transfer amount from a payment to a charge, due to the state average risk score increasing.
- In state market risk pools with a positive weighted average risk score error rate, zero error rate issuers can generally expect their charge to decrease, their payment to increase, or a shift in the transfer amount from a charge to a payment, due to the state average risk score decreasing.

5. Next Steps:

Information on the HHS-RADV adjustments to 2022 benefit year risk adjustment state transfers will be available when the Summary Report of 2022 Benefit Year Risk Adjustment Data Validation Adjustments to Risk Adjustment Transfers is released later in May 2024.²²

¹⁹ If an issuer operates in both a single issuer market risk pool and another market risk pool with multiple issuers within the same state, and does not meet any other exemption requirements, then this issuer may be selected to participate in HHS-RADV and receive a positive or negative error rate. In the single issuer market risk pool, however, the risk adjustment transfer amount remains zero after applying the error rate.

²⁰ This report is available at <https://www.cms.gov/files/document/summary-report-permanent-risk-adjustment-transfers-2022-benefit-year.pdf>.

²¹ In Appendix B below, there are instances in individual, small group, and catastrophic market risk pools where Appendix B shows 0.00% but a risk adjustment transfer amount change will occur. This is a result of the small non-zero value of the weighted average risk score error rate rounding to 0.00% at two decimal places. These values read as 0.00%. Values which read as “—” and are greyed out are represent values of zero out to the ninth decimal place, in which there will be no HHS-RADV adjustments to 2022 benefit year risk adjustment state transfer amounts.

²² See *supra* note 2.

Error Rate Calculation Attestation and Discrepancy Reporting Process: All issuers subject to 2022 benefit year HHS-RADV are required to attest to the 2022 benefit year error rate calculation or qualify the attestation by filing a discrepancy (see 45 CFR 153.630(d)(2)).²³ Beginning on May 15, 2024, issuers have thirty calendar days (that is, until June 13, 2024) to attest to findings or qualify their attestation with a discrepancy related to the 2022 benefit year HHS-RADV risk score error rate calculation. Issuers will need to attest by completing the Error Rate Attestation and Discrepancy Reporting Process in the HHS-RADV Audit Tool. A separate communication will be distributed to issuers with instructions for completing the HHS-RADV Error Rate Attestation and Discrepancy Form.

Issuers are encouraged to review their results and contact CMS with any questions at: CCIIOACARADatavalidation@cms.hhs.gov.

²³ Both outlier and non-outlier issuers are required to attest to their respective error rate calculation or qualify the attestation by filing a discrepancy. Exempt issuers are not subject to this requirement.

Appendix A. National Program Benchmarks – 2022 Benefit Year HHS-RADV

Table A1: National Failure Rate Group Summary Statistics for 2022 Benefit Year HHS-RADV

Failure Rate Group	Lower 99.7% CI Threshold*	Lower 90% CI Threshold*	National Weighted Mean*	Upper 90% CI Threshold*	Upper 99.7% CI Threshold*	Weighted Standard Deviation of GFR	Number of Outliers
Low	-0.142598490	-0.063552066	0.032412043	0.128376152	0.207422576	0.058336844	47
Medium	-0.120621029	-0.028487719	0.083364159	0.195216038	0.287349348	0.067995063	50
High	-0.025218381	0.067688772	0.180480114	0.293271456	0.386178611	0.068566165	44

*Please note, these values indicate National Confidence Interval Point Values.

Table A2: National Error Rate Summary Statistics

Metric	2022
HIOS ID Count	463
Total # Issuers Receiving an Error Rate (+ or -)	96
Count of Issuers with Final Negative Error Rate	58
Average National Negative (Total) Error Rate	-0.013733312
Negative (Total) Error Rate (Max)	-0.076926844
Count of Issuers with Final Positive Error Rate	38
Average National Positive (Total) Error Rate	0.028899344
Positive (Total) Error Rate (Max)	0.228203087

Appendix B. 2022 Benefit Year Risk Adjustment State Market Risk Pool Weighted Average HHS-RADV Error Rates

Appendix B provides comparison information that shows which state market risk pools are impacted by 2022 benefit year HHS-RADV error rates due to the presence of at least one error rate outlier in the state market risk pool and the associated average error rates.^{24,25} Issuers' 2022 benefit year HHS-RADV error rates will be used to calculate HHS-RADV adjustments to 2022 benefit year risk adjustment state transfers. For more information on interpreting this table, refer to section "4. Impact of HHS-RADV Error Rates and Outlier Status on 2022 Benefit Year Risk Adjustment Transfers" on page 8.

State	Individual (Excluding Catastrophic)	Small Group	Catastrophic
AK	1.59%	1.57%	N/A
AL	5.42%	5.65%	5.67%
AR	0.00%	--	1.73%
AZ	-0.01%	-0.07%	--
CA	0.02%	-0.02%	0.10%
CO	-1.07%	-1.18%	-0.81%
CT	--	-0.41%	--
DC	-0.08%	-0.03%	-0.04%
DE	0.00%	0.00%	0.00%
FL	-0.02%	-0.01%	-0.02%
GA	-0.12%	-0.26%	-0.10%
HI	--	--	--
IA	--	--	--
ID	0.03%	--	--
IL	0.00%	--	--
IN	--	--	N/A
KS	-0.11%	-0.01%	--
KY	--	--	--
LA	0.37%	0.94%	N/A
MA	0.22%	N/A	0.14%
MD	-0.60%	-0.09%	-0.23%
ME	1.41%	1.14%	0.82%
MI	-0.10%	-0.02%	0.00%
MN	--	-0.02%	--
MO	-0.97%	-0.09%	--

State	Individual (Excluding Catastrophic)	Small Group	Catastrophic
MS	-0.28%	-0.01%	N/A
MT	--	0.03%	--
NC	-1.34%	-1.36%	-1.73%
ND	--	--	--
NE	--	0.00%	--
NH	--	0.07%	--
NJ	-0.05%	-0.07%	0.28%
NM	--	--	N/A
NV	0.04%	--	--
NY	0.11%	0.20%	0.23%
OH	0.07%	0.00%	--
OK	0.10%	--	0.43%
OR	-0.38%	-0.51%	--
PA	-0.15%	-0.14%	-0.15%
RI	--	--	N/A
SC	--	--	--
SD	--	3.22%	--
TN	--	--	--
TX	0.02%	0.00%	--
UT	-0.12%	-0.41%	--
VA	-0.52%	-0.13%	-0.65%
VT	--	--	--
WA	--	0.00%	--
WI	-0.06%	-0.04%	-0.01%
WV	-0.29%	-0.47%	-0.39%
WY	6.85%	4.77%	N/A

- Notes:** (1) "N/A" represents states with no issuers operating in that state market risk pool and are therefore grayed out.
(2) Values for the merged market state (Massachusetts) are displayed in the Individual (Excluding Catastrophic) column with an "N/A" in the small group column.
(3) Values which read "--" and are greyed out are values of zero out to the ninth decimal place; values which read "0.00%" and are not greyed out are very small values that round to 0.00%.

²⁴ The state market risk pool weighted average risk score error rate is calculated by taking the weighted average of issuers' error rates among all issuers within the state market risk pool. The weight for an issuer is equal to the total risk score of the issuer within the state market risk pool, which is calculated as the summation of the plan liability risk score multiplied by the plan-level billable member months among all plans for the issuer within the state market risk pool.

²⁵ We note that the state market risk pool weighted average risk score error rates account for all risk adjustment EDGE discrepancies to date. The information on impacted state market risk pools in this appendix is subject to change as it does not take into account any adjustments for any potential actionable HHS-RADV discrepancies or successful HHS-RADV appeals.

Appendix C. 2022 Benefit Year HHS-RADV Failure Rate Group Definitions

Appendix C provides a listing of HCCs, the associated Super HCC, and the group detail for the 2022 benefit year HHS-RADV.

Super HCC	RA Age Group Model	Failure Rate Group	HCC	HCC Label ²⁶
1	Adult, Child	Low Failure Rate Group	1	HIV/AIDS
2	Adult, Child	Medium Failure Rate Group	2	Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock
3	Adult, Child	High Failure Rate Group	3	Central Nervous System Infections, Except Viral Meningitis
4	Adult, Child	High Failure Rate Group	4	Viral or Unspecified Meningitis
6	Adult, Child	High Failure Rate Group	6	Opportunistic Infections
8	Adult, Child	High Failure Rate Group	8	Metastatic Cancer
9	Adult, Child	High Failure Rate Group	9	Lung, Brain, and Other Severe Cancers, Including Pediatric Acute Lymphoid Leukemia
10	Adult, Child	High Failure Rate Group	10	Non-Hodgkin Lymphomas and Other Cancers and Tumors
11	Adult, Child	High Failure Rate Group	11	Colorectal, Breast (Age < 50), Kidney, and Other Cancers
12	Adult, Child	High Failure Rate Group	12	Breast (Age 50+) and Prostate Cancer, Benign/Uncertain Brain Tumors, and Other Cancers and Tumors
13	Adult, Child	High Failure Rate Group	13	Thyroid Cancer, Melanoma, Neurofibromatosis, and Other Cancers and Tumors
18	Adult, Child	Medium Failure Rate Group	18	Pancreas Transplant Status
G01	Adult, Child	Low Failure Rate Group	19	Diabetes with Acute Complications
			20	Diabetes with Chronic Complications
			21	Diabetes without Complication
22	Adult	High Failure Rate Group	22	Type 1 Diabetes Mellitus, add-on to Diabetes HCCs 19-21
23	Adult, Child	Low Failure Rate Group	23	Protein-Calorie Malnutrition
G02B	Adult, Child	High Failure Rate Group	26	Mucopolysaccharidosis
			27	Lipidoses and Glycogenesis
G02D	Child	High Failure Rate Group	28	Congenital Metabolic Disorders, Not Elsewhere Classified
			29	Amyloidosis, Porphyria, and Other Metabolic Disorders
29	Adult	High Failure Rate Group	29	Amyloidosis, Porphyria, and Other Metabolic Disorders
30	Adult, Child	Medium Failure Rate Group	30	Adrenal, Pituitary, and Other Significant Endocrine Disorders
34	Adult, Child	Medium Failure Rate Group	34	Liver Transplant Status/Complications
35_1	Adult, Child	High Failure Rate Group	35_1	Acute Liver Failure/Disease, Including Neonatal Hepatitis
35_2	Adult, Child	Low Failure Rate Group	35_2	Chronic Liver Failure/End-Stage Liver Disorders
36	Adult, Child	Low Failure Rate Group	36	Cirrhosis of Liver
37_1	Adult, Child	High Failure Rate Group	37_1	Chronic Viral Hepatitis C
37_2	Adult, Child	Medium Failure Rate Group	37_2	Chronic Hepatitis, Except Chronic Viral Hepatitis C
41	Adult, Child	Low Failure Rate Group	41	Intestine Transplant Status/Complications
42	Adult, Child	High Failure Rate Group	42	Peritonitis/Gastrointestinal Perforation/Necrotizing Enterocolitis
45	Adult, Child	High Failure Rate Group	45	Intestinal Obstruction
46	Adult, Child	High Failure Rate Group	46	Chronic Pancreatitis
47	Adult, Child	Medium Failure Rate Group	47	Acute Pancreatitis

²⁶ For information regarding which Infant HCCs map to the Infant Super HCCs in this table, see DIY Table 8: Additional Infant Variables located at <https://www.cms.gov/files/document/cy2022-diy-tables-03312023.xlsx>. See also the 2022 HHS-RADV Protocols, Appendix F, available at: regtap.cms.gov/reg_library_openfile.php?id=4469&type=1.

48	Adult, Child	Medium Failure Rate Group	48	Inflammatory Bowel Disease
54	Adult	Medium Failure Rate Group	54	Necrotizing Fasciitis
55	Adult	Medium Failure Rate Group	55	Bone/Joint/Muscle Infections/Necrosis
G03	Child	Medium Failure Rate Group	54	Necrotizing Fasciitis
			55	Bone/Joint/Muscle Infections/Necrosis
56	Adult, Child	Low Failure Rate Group	56	Rheumatoid Arthritis and Specified Autoimmune Disorders
57	Adult, Child	Medium Failure Rate Group	57	Systemic Lupus Erythematosus and Other Autoimmune Disorders
G04	Adult, Child	Medium Failure Rate Group	61	Osteogenesis Imperfecta and Other Osteodystrophies
			62	Congenital/Developmental Skeletal and Connective Tissue Disorders
63	Adult, Child	High Failure Rate Group	63	Cleft Lip/Cleft Palate
66	Adult, Child	Medium Failure Rate Group	66	Hemophilia
G06A	Adult, Child	High Failure Rate Group	67	Myelodysplastic Syndromes and Myelofibrosis
			68	Aplastic Anemia
			69	Acquired Hemolytic Anemia, Including Hemolytic Disease of Newborn
G07A	Adult, Child	High Failure Rate Group	70	Sickle Cell Anemia (Hb-SS)
			71	Beta Thalassemia Major
G08	Adult, Child	Low Failure Rate Group	73	Combined and Other Severe Immunodeficiencies
			74	Disorders of the Immune Mechanism
75	Adult, Child	Medium Failure Rate Group	75	Coagulation Defects and Other Specified Hematological Disorders
G09A	Adult, Child	High Failure Rate Group	81	Drug Use with Psychotic Complications
			82	Drug Use Disorder, Moderate/Severe, or Drug Use with Non-Psychotic Complications
G09C	Adult, Child	Low Failure Rate Group	83	Alcohol Use with Psychotic Complications
			84	Alcohol Use Disorder, Moderate/Severe, or Alcohol Use with Specified Non-Psychotic Complications
87_1	Adult, Child	High Failure Rate Group	87_1	Schizophrenia
87_2	Adult, Child	High Failure Rate Group	87_2	Delusional and Other Specified Psychotic Disorders, Unspecified Psychosis
88	Adult, Child	High Failure Rate Group	88	Major Depressive Disorder, Severe, and Bipolar Disorders
90	Adult, Child	High Failure Rate Group	90	Personality Disorders
94	Adult, Child	High Failure Rate Group	94	Anorexia/Bulimia Nervosa
96	Adult, Child	Low Failure Rate Group	96	Prader-Willi, Patau, Edwards, and Autosomal Deletion Syndromes
97	Adult, Child	High Failure Rate Group	97	Down Syndrome, Fragile X, Other Chromosomal Anomalies, and Congenital Malformation Syndromes
102	Adult, Child	High Failure Rate Group	102	Autistic Disorder
103	Adult, Child	High Failure Rate Group	103	Pervasive Developmental Disorders, Except Autistic Disorder
G10	Adult, Child	High Failure Rate Group	106	Traumatic Complete Lesion Cervical Spinal Cord
			107	Quadriplegia
G11	Adult, Child	Low Failure Rate Group	108	Traumatic Complete Lesion Dorsal Spinal Cord
			109	Paraplegia
110	Adult, Child	High Failure Rate Group	110	Spinal Cord Disorders/Injuries
111	Adult, Child	High Failure Rate Group	111	Amyotrophic Lateral Sclerosis and Other Anterior Horn Cell Disease
112	Adult, Child	Low Failure Rate Group	112	Quadriplegic Cerebral Palsy
113	Adult, Child	High Failure Rate Group	113	Cerebral Palsy, Except Quadriplegic
114	Adult, Child	Medium Failure Rate Group	114	Spina Bifida and Other Brain/Spinal/Nervous System Congenital Anomalies
115	Adult, Child	Low Failure Rate Group	115	Myasthenia Gravis/Myoneural Disorders and Guillain-Barre Syndrome/Inflammatory and Toxic Neuropathy
G12	Adult, Child	High Failure Rate Group	117	Muscular Dystrophy
			119	Parkinson's, Huntington's, and Spinocerebellar

				Disease, and Other Neurodegenerative Disorders
118	Adult, Child	Low Failure Rate Group	118	Multiple Sclerosis
120	Adult, Child	Low Failure Rate Group	120	Seizure Disorders and Convulsions
121	Adult, Child	Medium Failure Rate Group	121	Hydrocephalus
122	Adult, Child	Medium Failure Rate Group	122	Coma, Brain Compression/Anoxic Damage
123	Adult, Child	High Failure Rate Group	123	Narcolepsy and Cataplexy
125	Adult, Child	High Failure Rate Group	125	Respirator Dependence/Tracheostomy Status
G13	Adult, Child	Medium Failure Rate Group	126	Respiratory Arrest
			127	Cardio-Respiratory Failure and Shock, Including Respiratory Distress Syndromes
G14	Adult, Child	Medium Failure Rate Group	128	Heart Assistive Device/Artificial Heart
			129	Heart Transplant Status/Complications
130	Adult, Child	Medium Failure Rate Group	130	Heart Failure
131	Adult	High Failure Rate Group	131	Acute Myocardial Infarction
132	Adult	High Failure Rate Group	132	Unstable Angina and Other Acute Ischemic Heart Disease
G23	Child	High Failure Rate Group	131	Acute Myocardial Infarction
			132	Unstable Angina and Other Acute Ischemic Heart Disease
135	Adult, Child	Low Failure Rate Group	135	Heart Infection/Inflammation, Except Rheumatic
137	Child	High Failure Rate Group	137	Hypoplastic Left Heart Syndrome and Other Severe Congenital Heart Disorders
138	Child	Medium Failure Rate Group	138	Major Congenital Heart/Circulatory Disorders
139	Child	High Failure Rate Group	139	Atrial and Ventricular Septal Defects, Patent Ductus Arteriosus, and Other Congenital Heart/Circulatory Disorders
G21	Adult	High Failure Rate Group	137	Hypoplastic Left Heart Syndrome and Other Severe Congenital Heart Disorders
			138	Major Congenital Heart/Circulatory Disorders
			139	Atrial and Ventricular Septal Defects, Patent Ductus Arteriosus, and Other Congenital Heart/Circulatory Disorders
142	Adult, Child	Low Failure Rate Group	142	Specified Heart Arrhythmias
145	Adult, Child	High Failure Rate Group	145	Intracranial Hemorrhage
146	Adult, Child	High Failure Rate Group	146	Ischemic or Unspecified Stroke
149	Adult, Child	High Failure Rate Group	149	Cerebral Aneurysm and Arteriovenous Malformation
150	Adult, Child	Medium Failure Rate Group	150	Hemiplegia/Hemiparesis
151	Adult, Child	High Failure Rate Group	151	Monoplegia, Other Paralytic Syndromes
153	Adult, Child	Medium Failure Rate Group	153	Atherosclerosis of the Extremities with Ulceration or Gangrene
154	Adult, Child	High Failure Rate Group	154	Vascular Disease with Complications
156	Adult, Child	High Failure Rate Group	156	Pulmonary Embolism and Deep Vein Thrombosis
158	Adult, Child	High Failure Rate Group	158	Lung Transplant Status/Complications
159	Adult, Child	Medium Failure Rate Group	159	Cystic Fibrosis
160	Child	High Failure Rate Group	160	Chronic Obstructive Pulmonary Disease, Including Bronchiectasis
161_1	Child	High Failure Rate Group	161_1	Severe Asthma
161_2	Child	Medium Failure Rate Group	161_2	Asthma, Except Severe
G15A	Adult	Medium Failure Rate Group	160	Chronic Obstructive Pulmonary Disease, Including Bronchiectasis
			161_1	Severe Asthma
			161_2	Asthma, Except Severe
162	Adult, Child	Medium Failure Rate Group	162	Fibrosis of Lung and Other Lung Disorders
163	Adult, Child	High Failure Rate Group	163	Aspiration and Specified Bacterial Pneumonias and Other Severe Lung Infections
174	Adult	High Failure Rate Group	174	Exudative Macular Degeneration
183	Adult, Child	Low Failure Rate Group	183	Kidney Transplant Status/Complications
184	Adult, Child	High Failure Rate Group	184	End Stage Renal Disease
G16	Adult, Child	Low Failure Rate Group	187	Chronic Kidney Disease, Stage 5

			188	Chronic Kidney Disease, Severe (Stage 4)
203	Adult, Child	High Failure Rate Group	203	Ectopic and Molar Pregnancy
G17A	Adult, Child	High Failure Rate Group	204	Miscarriage with Complications
			205	Miscarriage with No or Minor Complications
G18A	Adult, Child	High Failure Rate Group	207	Pregnancy with Delivery with Major Complications
			208	Pregnancy with Delivery with Complications
209	Adult, Child	Low Failure Rate Group	209	Pregnancy with Delivery with No or Minor Complications
210	Adult	Medium Failure Rate Group	210	(Ongoing) Pregnancy without Delivery with Major Complications
211	Adult	Low Failure Rate Group	211	(Ongoing) Pregnancy without Delivery with Complications
G19B	Child	High Failure Rate Group	210	(Ongoing) Pregnancy without Delivery with Major Complications
			211	(Ongoing) Pregnancy without Delivery with Complications
212	Adult, Child	High Failure Rate Group	212	(Ongoing) Pregnancy without Delivery with No or Minor Complications
217	Adult, Child	Low Failure Rate Group	217	Chronic Ulcer of Skin, Except Pressure
218	Adult, Child	High Failure Rate Group	218	Extensive Third-Degree Burns
219	Adult, Child	Medium Failure Rate Group	219	Major Skin Burn or Condition
223	Adult, Child	High Failure Rate Group	223	Severe Head Injury
226	Adult, Child	High Failure Rate Group	226	Hip and Pelvic Fractures
228	Adult, Child	High Failure Rate Group	228	Vertebral Fractures without Spinal Cord Injury
234	Adult	High Failure Rate Group	234	Traumatic Amputations and Amputation Complications
G22	Child	High Failure Rate Group	234	Traumatic Amputations and Amputation Complications
			254	Amputation Status, Upper Limb or Lower Limb
251	Adult, Child	Low Failure Rate Group	251	Stem Cell, Including Bone Marrow, Transplant Status/Complications
253	Adult, Child	Low Failure Rate Group	253	Artificial Openings for Feeding or Elimination
254	Adult	Low Failure Rate Group	254	Amputation Status, Upper Limb or Lower Limb
AGE1_X_SEVERITY1	Infant	Low Failure Rate Group		
AGE1_X_SEVERITY2	Infant	Low Failure Rate Group		
AGE1_X_SEVERITY3	Infant	Low Failure Rate Group		
AGE1_X_SEVERITY4	Infant	Low Failure Rate Group		
AGE1_X_SEVERITY5	Infant	High Failure Rate Group		
EXTREMELEY_IMMATURE_X_SEVERITY1	Infant	High Failure Rate Group		
EXTREMELEY_IMMATURE_X_SEVERITY3	Infant	Low Failure Rate Group		
EXTREMELEY_IMMATURE_X_SEVERITY4	Infant	Medium Failure Rate Group		
EXTREMELEY_IMMATURE_X_SEVERITY5	Infant	High Failure Rate Group		
IMMATURE_X_SEVERITY	Infant	Low Failure Rate Group		

TY1				
IMMATURE _X_SEVERI TY2	Infant	Low Failure Rate Group		
IMMATURE _X_SEVERI TY3	Infant	High Failure Rate Group		
IMMATURE _X_SEVERI TY4	Infant	Medium Failure Rate Group		
IMMATURE _X_SEVERI TY5	Infant	High Failure Rate Group		
PREMATUR E_MULTIPL ES_X_SEVE RITY1	Infant	Low Failure Rate Group		
PREMATUR E_MULTIPL ES_X_SEVE RITY2	Infant	High Failure Rate Group		
PREMATUR E_MULTIPL ES_X_SEVE RITY3	Infant	Medium Failure Rate Group		
PREMATUR E_MULTIPL ES_X_SEVE RITY4	Infant	Low Failure Rate Group		
PREMATUR E_MULTIPL ES_X_SEVE RITY5	Infant	High Failure Rate Group		
TERM_X_SE VERITY1	Infant	High Failure Rate Group		
TERM_X_SE VERITY2	Infant	High Failure Rate Group		
TERM_X_SE VERITY3	Infant	High Failure Rate Group		
TERM_X_SE VERITY4	Infant	Low Failure Rate Group		
TERM_X_SE VERITY5	Infant	High Failure Rate Group		