

# The next stage of Star Ratings evolution: 2025 Proposed Rule and beyond

What key Star Rating changes may CMS implement?

Hayley Rogers, FSA, MAAA  
Matthew H. Smith, FSA, MAAA  
Mike Yurkovic, ASA, MAAA



The release of the 2024 Star Ratings marked the beginning of a transformative phase in the program, with several key proposals on track to be implemented in 2025 and subsequent years. The 2025 Proposed Rule continues the program’s change trajectory, introducing a new approach to align quality measures across CMS programs among other changes and revisions. As always, plans must be aware of these changes to ensure that they remain ahead of the curve to ensure continued success in Medicare Advantage.

On November 6, 2023, the Centers for Medicare and Medicaid Services (CMS) released the 2025 Proposed Rule.<sup>1</sup> This Proposed Rule contained many provisions that would affect Medicare Advantage (MA) and prescription drug benefit (Part D) contracts, including guardrails against anticompetitive steering, improved access to behavioral healthcare providers, new standards for special supplemental benefits for the chronically ill (SSBCI), annual health equity analysis requirements, and more.<sup>2</sup>

This white paper offers a detailed look into the Proposed Rule relating to Star Ratings. It summarizes the proposed rules left unfinalized from the 2024 cycle, addresses the overarching goals of the Universal Foundation and CMS National Quality Strategy, and provides an overview of the new propositions for 2025. It is intended to inform stakeholders about the expected changes and implications of these modifications to the Medicare Advantage program.

## Key observations and conclusions in this paper include:

- Unfinalized propositions from the 2024 Proposed Rule, including revisions to “improvement measure hold harmless provisions,” remain active and could be implemented in the 2025 Final Rule. CMS has estimated that the hold harmless provisions would remove over \$2 billion from the program annually once implemented. Finalized changes, particularly the introduction of Health Equity Index (HEI) rewards, will have further program impacts.
- CMS has proposed a “Universal Foundation” approach to align quality measures across all CMS quality-rating and value-based care programs as much as possible. A preliminary set of measures has been identified, with additional measures expected to follow.
- CMS has proposed several new modifications to the Star Ratings program. These changes are not currently projected to have a material impact on aggregate Star Ratings or overall Medicare Advantage Prescription Drug (MAPD) revenues.

<sup>1</sup> The full text of CMS’s 2025 Proposed Rule is available at: <https://public-inspection.federalregister.gov/2023-24118.pdf>.

<sup>2</sup> The full text of the 2025 Proposed Rule Fact Sheet is available at: <https://www.cms.gov/newsroom/fact-sheets/contract-year-2025-policy-and-technical-changes-medicare-advantage-plan-program-medicare>.

## UNFINALIZED 2024 PROPOSED RULES WITH 2025 IMPLICATIONS

Although not mentioned in the 2025 Proposed Rule, several key propositions from the 2024 cycle remain on the table for finalization in 2025 and may indicate CMS's intentions for upcoming final rules:

- **Improvement measure hold harmless provisions:** In current Star Ratings, CMS calculates contract ratings for individual measures both with and without improvement measures. For measures rated at 4.0 Stars or higher without improvement measures, CMS will exempt the contract from receiving a lower Star Rating due to an improvement measure. For the 2026 Star Ratings, CMS has suggested raising the hold harmless threshold to 5.0 Stars on the basis that contracts with 4.0 or 4.5 Stars for their highest rating still have room for improvement.
- **Guardrails removal:** CMS has expressed its plan to eliminate the "guardrails" provision used in the calculation of non-Consumer Assessment of Healthcare Providers and Systems (CAHPS) measure cut points, which currently limits movement in the cut point thresholds to +/- 5% from year to year. CMS instead aims to maintain year-to-year stability in the cut points by removing the Tukey outliers, which CMS has stated will have a stabilizing effect similar to that of the guardrails.<sup>3</sup>
- **Other changes:** CMS also indicated its intention to implement the following proposed rule changes:
  - Removal of the stand-alone Part C "Medication Reconciliation Post-Discharge" measure
  - Inclusion of the updated Part C "Colorectal Cancer Screening and Care for Older Adults – Functional Status Assessment" measures
  - Addition of the Part D "Concurrent Use of Opioids and Benzodiazepines," "Polypharmacy Use of Multiple Anticholinergic Medications in Older Adults," and "Polypharmacy Use of Multiple Central Nervous System Active Medications in Older Adults" measures

We discuss the estimated impact of the changes to hold harmless provisions in the section below.

Tukey outlier removals were incorporated in the calculation of Star Ratings for the first time in the 2024 Star Ratings,<sup>4</sup> and their impact was discussed in detail in our earlier publication "[The future is now: 2024 Star Ratings release](#)," published on October 30, 2023.<sup>5</sup> If Tukey outlier removal has its intended effect, the guardrail provisions would be functionally replaced by Tukey outlier removal, along with improved predictability and stability of the non-CAHPS Star Rating measures.

Although this white paper does not estimate the impact of the proposed changes to specific measures, we mention them to highlight their future significance so that plans can proactively plan for their potential implementation.

## ESTIMATED IMPACT OF HOLD HARMLESS PROVISION AND FINALIZED METHODOLOGY CHANGES

CMS has finalized other upcoming methodology changes that are likely to lower the average future Star Ratings. These reductions could be further intensified if CMS finalizes the hold harmless provisions discussed above.

- **Star Rating year (SY) 2025/payment year (PY) 2026:** In the 2024 Star Ratings, CMS added the "Plan All-Cause Readmission," "Transitions of Care (TRC)," and "Follow-up After Emergency Department Visit (FMC)" measures with an initial weight of 1.0, with a hold harmless provision to benefit contracts in their first year. Starting in 2025, this provision will end and the weight for "Plan All-Cause Readmission" will rise to 3.0, aligning it with other "Intermediate Outcome Measure" weights.
- **SY 2026/PY 2027:** CMS will decrease the weight of patient experience, complaints, and access measures from 4.0 to 2.0 in the Star Ratings, increasing the impact of claim-based measures from 30% to 53% by 2027. Additionally, CMS will remove the Part C "Diabetes Care – Kidney Disease Monitoring" measure, add the "Kidney Health Evaluation for Patients With Diabetes" measure, and update several Part D medication adherence measures.

3 The full text of CMS's 2021 Final Rule is available at <https://www.federalregister.gov/documents/2020/06/02/2020-11342/medicare-program-contract-year-2021-policy-and-technical-changes-to-the-medicare-advantage-program>.

4 The full text of the 2024 Star Ratings Fact Sheet is available at <https://www.cms.gov/files/document/101323-fact-sheet-2024-medicare-advantage-and-part-d-ratings.pdf>.

5 Rogers, H., Smith, M., Nelson, P., & Yurkovic, M. (October 2023). The Future Is Now: 2024 Star Ratings Release. Milliman Research Report. Retrieved November 20, 2023, from [https://www.milliman.com/-/media/milliman/pdfs/2023-articles/10-30-23\\_the-future-is-now-2024-star-ratings-release\\_20231027.ashx](https://www.milliman.com/-/media/milliman/pdfs/2023-articles/10-30-23_the-future-is-now-2024-star-ratings-release_20231027.ashx).

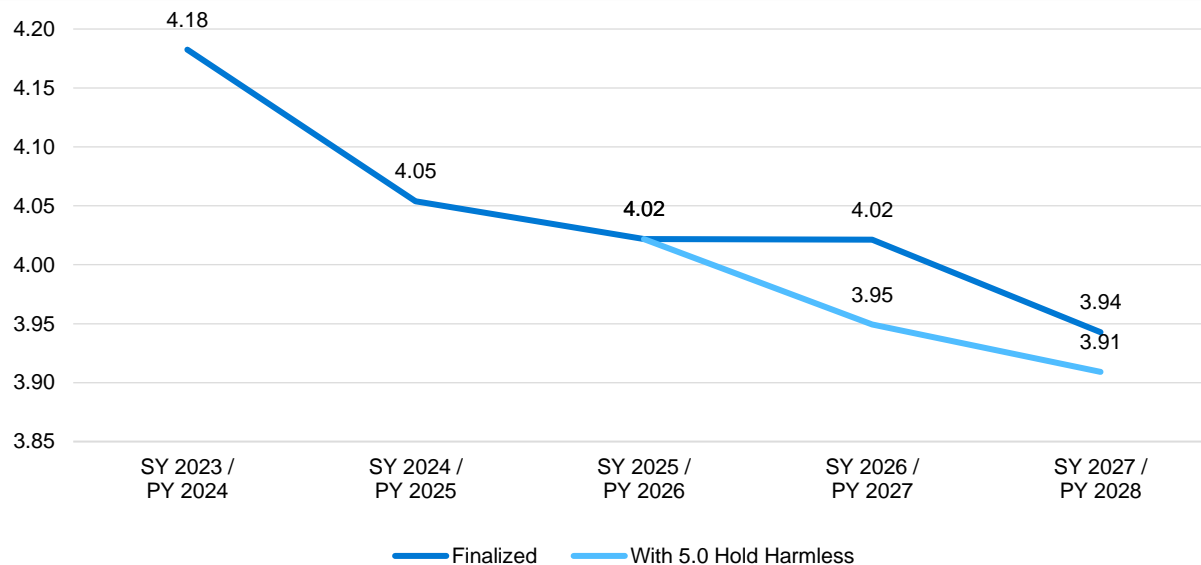
- **SY 2027/PY 2028:** Starting in SY 2027, the Star Ratings rewards system will transition to the HEI rewards system. While the current rewards system focuses solely on overall performance and consistency between individual measures, the new HEI factor will additionally consider whether a contract has and delivers high-quality care to social risk factor (SRF) populations.<sup>6</sup> This change in emphasis may lead to the removal of rewards factors from many contracts that currently have high performance and consistency levels but do not serve material SRF populations. It may also lead to the addition of rewards for some contracts that effectively serve these populations but do not currently qualify due to overall contract performance or consistency levels.

CMS estimates suggest that changes to hold harmless provisions and the implementation of an HEI rewards program are particularly impactful among the upcoming proposed or final changes to the Star Ratings program.

- **Hold harmless:** In the 2022 Proposed Rule, CMS estimated that implementing changes to hold harmless provisions would reduce payments to MA plans by \$2.08 billion in PY 2027 (SY 2026), increasing to \$3.52 billion in 2033.<sup>7</sup> This would roughly double CMS’s estimated program savings from the other changes discussed in that Proposed Role, which notably included the introduction of Tukey outlier removals.<sup>8</sup>
- **HEI rewards:** Additionally, in the 2024 Final Rule, CMS estimated the impact of the proposed HEI reward provision at \$670 million in savings in PY 2028, increasing to \$1.05 billion in PY 2033. CMS also simulated the impact of the proposed HEI reward on a per contract basis. Using 2020 and 2021 Star Ratings data, CMS found that 13.4% of contracts would have lost 0.5 Stars, and 1.7% would have gained 0.5 Stars. This would be roughly equivalent to a national average Star Ratings decline of 0.06 Stars.<sup>9</sup>

Given the potential importance of these program changes, we performed independent estimates of the impact from these provisions under two scenarios: a hold harmless threshold of 4.0 (current) and a 5.0 hold harmless threshold. Figure 1 shows the estimated impacts of the upcoming methodology changes, based on the September 2023 membership and current Star Ratings data by contract.

**FIGURE 1: ESTIMATED MEMBER-WEIGHTED AVERAGE STAR RATING BY STAR RATING YEAR (SY) AND PAYMENT YEAR (PY)**



6 Examples of SRF include low-income, dual-eligible, and disabled.

7 The full text of CMS’s 2022 Proposed Rule is available at <https://www.govinfo.gov/content/pkg/FR-2022-12-27/pdf/2022-26956.pdf>.

8 Rogers, H., Smith, M., & Yurkovic, M. (October 2023). Future of Medicare Star Ratings: The Reimagined CMS Bonus System. Milliman Research Report. Retrieved November 10, 2023, from <https://www.milliman.com/en/insight/future-of-medicare-star-ratings-reimagined-cms-bonus-system>.

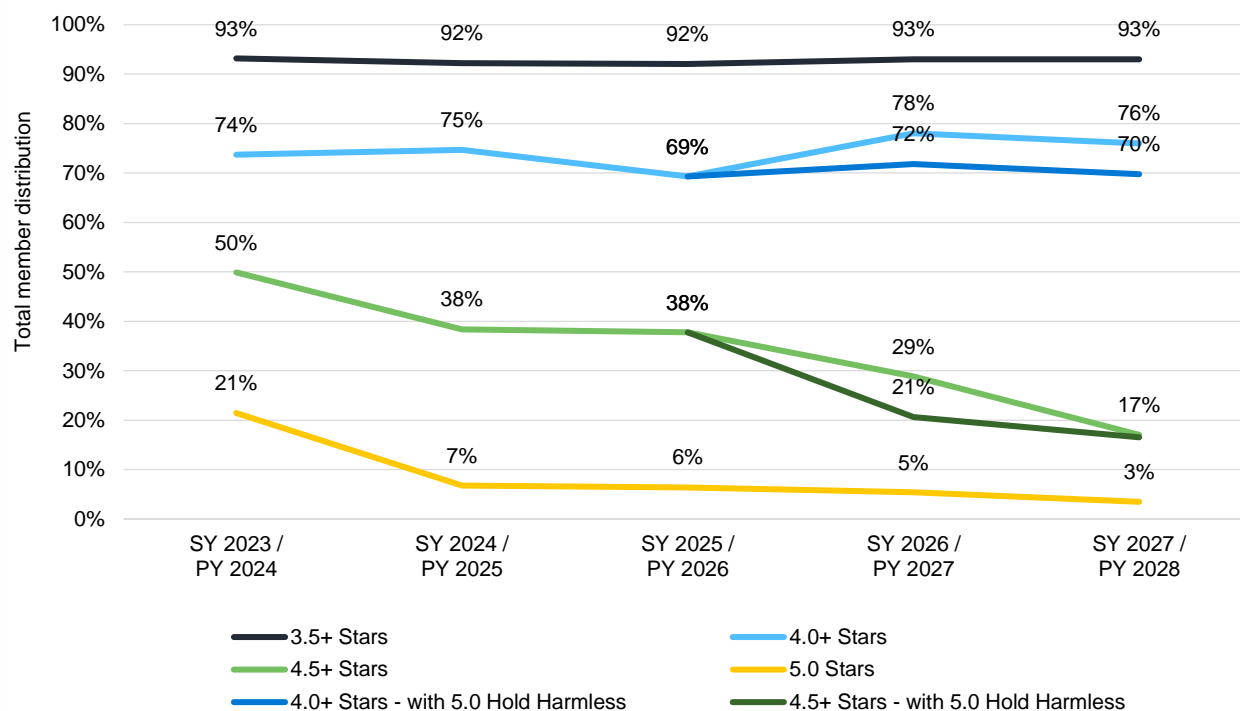
9 This corresponds to a 0.0585 drop in average Star Rating per contract. Additional variation may exist due to the difference between per contract and per member average Star Ratings. CMS 2024 Final Rule: <https://public-inspection.federalregister.gov/2023-07115.pdf>.

As Figure 1 shows, we find that the hold harmless and HEI rewards changes would have a combined impact comparable to that of Tukey outlier removals and other 2024 changes. From SY 2023 to SY 2024, the national average Star Rating dropped from 4.18 to 4.05 Stars, while hold harmless and HEI would combine to drop the Star Rating further, from 4.02 to 3.91 Stars.

There was also a material drop in the national average 2023 Star Ratings (and resulting plan revenues for 2024) from the prior year; this drop was largely due to CMS sunsetting the measure-level adjustments in response to the COVID-19 Public Health Emergency (PHE), in contrast to the new policies as we discuss and model in this section.<sup>10</sup>

Figure 2 presents a simulated breakdown of cumulative membership percentages across descending Star Rating levels: 5.0 Stars, 4.5+ Stars, 4.0+ Stars, and 3.5+ Stars. This is based on the 2024 Star Ratings, the membership data from September 2023, and the expected impact of both finalized and unfinalized provisions (5.0-Star hold harmless threshold) in the upcoming years.

**FIGURE 2: ESTIMATED CUMULATIVE MEMBER STAR RATING DISTRIBUTIONS BY STAR RATING YEAR (SY) AND PAYMENT YEAR (PY)**



We found that the HEI rewards impact in PY 2028 was heavily concentrated among current plans with 4.5 or higher Stars. We also found that, in the same year, the hold harmless impact was heavily concentrated among 4.0-Star plans.<sup>11</sup> This pattern appears to be driven by three factors: first, current plans with 4.5 or higher Stars in aggregate have lower SRF populations than the MA program as a whole; second, there is a correlation between contracts affected by HEI rewards and by hold harmless; and third, many current 4.5-Star contracts rely on the bonus to reach that level. Therefore, once the new HEI rewards program removes the bonus, many of the contracts that would also be affected by hold harmless are already below a 4.5-Star level. It may be particularly important for plans that may be affected by hold harmless and HEI rewards to consider the potential impact of both of those provisions adversely affecting Star Ratings.

<sup>10</sup> The full text of CMS's 2023 Star Ratings Fact Sheet can be found at: <https://www.cms.gov/files/document/2023-medicare-star-ratings-fact-sheet.pdf>.

<sup>11</sup> In PY 2027, hold harmless materially impacted plans with both 4.0+ and 4.5+ Stars.

We also found a significant shift in the distribution of members in PY 2027, driven by the changes to the weights of individual measures. While this is not projected to materially impact the overall national average Star Rating, it is projected to substantially increase the number of 4.0-Star contracts, dropping the ratings for a number of 4.5-Star contracts, and increasing the ratings for a number of 3.5-Star contracts. Plans should be ready for the implications of these movements in their markets, especially in highly competitive markets with many existing contracts.

This simulation shows that the percentage of members in 5.0-Star contracts will decrease from approximately 21% in PY 2024 to 3% by PY 2028; much of this decrease resulted from the CMS implementation of the Tukey outlier removal provision in the 2024 Star Ratings. Although a rating reduction to 4.5 Stars would not directly affect CMS revenue, it would affect the marketing and enrollment privileges of those contracts. Additionally, the simulation suggests that many 5.0-Star contracts may potentially fall to 3.5 Stars by PY 2028.

Beyond the significant drop in members among 5.0-Star plans, we also found that the percentage of members in 4.5 Star or higher contracts would drop from 50% in PY 2024 to only 17% by PY 2028. We found that several contracts rated at 4.5 Stars in PY 2025 could drop to as low as 3.0 Stars by PY 2028, based solely on the methodology changes discussed here.

The sidebar summarizes the rebate percentages and the benchmark quality bonus percentage (QBP) amounts by Star Ratings. Please see Figure 10 in “[The future is now: 2024 Star Ratings release](#)”<sup>12</sup> for the projected impact to an the CMS revenue for an individual contract, based on changes to Star Ratings and the expected bid-to-benchmark ratios.

The other changes being considered by CMS may also impact Star Ratings, particularly on the individual contract level. However, CMS has not released guidance suggesting that these other changes are likely to have a material impact on overall program averages, and the information released by CMS about these individual changes appears consistent with this conclusion.

SIDEBAR: CMS REVENUE ADJUSTMENTS BY STAR RATING		
STAR RATING	REBATE PERCENTAGE	QBP %
< 3.5	50%	0.0%
3.5	65%	0.0%
4.0	65%	5.0%
4.5 +	70%	5.0%
New/Low	65%	3.5%

## UNIVERSAL QUALITY MEASURES

CMS currently tracks 535 active quality measures<sup>13</sup> across 41 distinct quality programs<sup>14</sup> within Medicare, Medicaid, and the marketplace. The scope of information reported to CMS to promote healthcare quality has led to confusion and has increased reporting burdens and inconsistencies, especially within the various CMS quality programs.

To address these issues, CMS proposed a “Universal Foundation” of quality measures. This initiative aims to streamline and align measures across different CMS quality-rating and value-based care programs, reducing the burden on healthcare providers, identifying disparities in care, and focusing on outcomes meaningful to patients. The Universal Foundation will employ a building-block approach, where a core set of quality measures will be applicable across CMS programs, with additional measures tailored to specific populations or settings.

CMS has begun by selecting preliminary measures for adult and pediatric care, focusing on conditions with high morbidity and mortality rates, such as diabetes, hypertension, and cancer. Figure 3 summarizes the preliminary list of adult and pediatric Universal Foundation measures.<sup>15</sup>

There is recognition of the gaps in current measures, such as patient safety in ambulatory settings and holistic well-being, which the Universal Foundation aims to address over time. The CMS Innovation Center will continue to experiment with new measures in various models while leveraging the Universal Foundation where feasible.

<sup>12</sup> The Future Is Now: 2024 Star Ratings Release, op cit.

<sup>13</sup> CMS. Measure Inventory. Retrieved November 20, 2023, from <https://cmit.cms.gov/cmit/#/MeasureInventory>.

<sup>14</sup> CMS. Measure Summary. Retrieved November 20, 2023, from <https://cmit.cms.gov/cmit/#/MeasureSummary>.

<sup>15</sup> Jacobs, D., Schreiber, M., Seshamani, M., Tsai, D., Fowler, E., & Fleisher, L. (March 2023). Aligning Quality Measures Across CMS – The Universal Foundation. *New England Journal of Medicine*. Retrieved November 20, 2023, from <https://www.nejm.org/doi/full/10.1056/NEJMp2215539>.

**FIGURE 3: PRELIMINARY ADULT AND PEDIATRIC UNIVERSAL FOUNDATION MEASURES\***

DOMAIN	IDENTIFICATION NUMBER AND NAME	
	ADULT	PEDIATRIC
<b>Wellness and prevention</b>	<b>139:</b> Colorectal cancer screening <b>93:</b> Breast cancer screening <b>26:</b> Adult immunization status	<b>761 &amp; 123:</b> Well-child visits (well-child visits in the first 30 months of life; child and adolescent well-care visits) <b>124 &amp; 363:</b> Immunization (childhood immunization status; immunizations for adolescents) <b>760:</b> Weight assessment and counseling for nutrition and physical activity for children and adolescents <b>897:</b> Oral evaluation, dental services
<b>Chronic conditions</b>	<b>167:</b> Controlling high blood pressure <b>204:</b> Hemoglobin A1c poor control (>9%)	<b>80:</b> Asthma medication ratio (reflects appropriate medication management of asthma)
<b>Behavioral health</b>	<b>672:</b> Screening for depression and follow-up plan <b>394:</b> Initiation and engagement of substance use disorder treatment	<b>672:</b> Screening for depression and follow-up plan <b>268:</b> Follow-up after hospitalization for mental illness <b>264:</b> Follow-up after emergency department visit for substance use <b>743:</b> Use of first-line psychosocial care for children and adolescents on antipsychotics <b>271:</b> Follow-up care for children prescribed attention deficit-hyperactivity disorder medicine
<b>Person-centered care</b>	<b>158</b> (varies by program): Consumer Assessment of Healthcare Providers and Systems overall rating measures (CAHPS)	
<b>Seamless care coordination</b>	<b>561 or 44:</b> Plan all-cause readmissions or all-cause hospital readmissions	N/A
<b>Equity</b>	<b>Number to be determined:</b> Screening for social drivers of health	N/A

We expect the Universal Foundation will reduce the administrative burden of tracking different, but similar, measures across CMS's other quality programs. Plans should monitor future iterations of the Universal Foundation as measures impacting Star Ratings could be newly added, removed, or modified.

### PROPOSED RULE MEASURE AND PROCESS ADJUSTMENTS

In addition to the changes discussed above, the 2025 Proposed Rule also introduces several new modifications to individual Star measures and processes:<sup>16</sup>

- **Medication Therapy Management (MTM) Program completion rate for comprehensive medication review (CMR):** In the December 2022 Proposed Rule, CMS proposed changes that would increase eligibility for the MTM Program. CMS proposes that if those changes are finalized, the MTM measure would become a display measure not counted for overall contract Star Ratings for at least two years.
- **Appeals measure adjustments:** Changes in the methodology for calculating Part C appeals measures are proposed, including how CMS addresses reductions due to data integrity issues. Notably, if accurate data validation for Part C appeals measures is not possible, then the Star Ratings for these measures may be reduced to one Star.
- **Data review enhancements:** Additional avenues for MA and Part D sponsors to request data reviews before Star Ratings calculations are proposed, indicating an expanded and more detailed review process.
- **Contract consolidations calculation of the Health Equity Index (HEI):** CMS has previously finalized the decision to have the 2027 Star Ratings include an HEI reward factor to replace the current reward factor, rewarding contracts with meaningful low-income, dual-eligible, and disabled populations and higher Star measure results as compared to their peers. In this Proposed Rule, CMS aims to assign the enrollment-weighted mean of the HEI reward of the consumed and surviving contracts.

<sup>16</sup> See discussion starting on page 255 of CMS's 2025 Proposed Rule, op cit.

- **Contract consolidations calculation of the Categorical Adjustment Index (CAI):** CMS proposes an adjusted approach to the CAI for contract consolidations.
- **QBP rules revisions:** Potential changes to the QBP appeal process are discussed, including the CMS administrator's authority to review and modify hearing officer.

We expect these changes to have a minimal impact in aggregate on plan revenues in future payment years. While the introduction of the HEI rewards system is expected to have a material impact, the new contract consolidation calculation for HEI is not expected to have nearly as large an impact.

## ASSUMPTIONS AND VALIDATION

A key part of our analysis was validating our calculations as compared to the 2022, 2023, and 2024 Star Ratings data published by CMS. We replicated each individual contract's calculated Star Rating using the published Star Rating year-specific measure results, measure weights, measure cut points, Categorical Adjustment Index (CAI) values, disaster percentages, reward system logic, hold harmless provisions, and Puerto Rico adjustments. We then compared our calculated Star Ratings for each contract to their actual published Star Rating. By doing so, we matched all but two of the contracts rated by CMS.

For the simulated 2025, 2026, 2027, and 2028 Star Ratings, we relied on the 2024 Star Ratings as a starting point and applied the Star Rating methodology rule changes to generate the simulations in this report. We relied on the 2023 Display Measure results for any new measures in future years and generated cut points on the Display Measure data using the 2024 Star Rating cut point methodology. We did not project any shifts to the future contract-level measure results, but focused on modeling how future methodology changes would affect the most recent Star and Display Measure results at the contract level.

For the Health Equity Index (HEI) rewards impact, we utilized September 2023 CMS Medicare Advantage enrollment data<sup>17</sup> to generate the estimated percentage of SRF population by contract. The median SRF percentage across all 2024 Star Rating contracts with experience was 44%, closely aligning with the 42% used in CMS simulations using data from the 2020 and 2021 Star Ratings.<sup>18</sup>

We determined the maximum reward by comparing contract specific SRF membership percentages against the median (44%) and half median (22%) percentages across all contracts. Contracts with SRF greater than 44% received a maximum reward of 0.4, contracts with SRF between 22% and 44% received a maximum reward of 0.2, and contracts with SRF below 22% would be ineligible for a reward. We also assumed that currently high-performing plans would maintain consistent measure results across both SRF and non-SRF populations and calculated each contract's reward under the new HEI Reward as the lesser of the reward under the current system and the maximum reward under the new HEI system.<sup>19</sup>

## CLOSING REMARKS

The 2024 Star Ratings introduced significant complexities for numerous plans, and the anticipated future Star Ratings methodology changes will continue to pose challenges that require strategic planning. Notably, program modifications previously suggested but not yet confirmed, like revisions to the hold harmless provisions and the guardrail removal, could substantially affect Star Ratings upon finalization. The impacts could be particularly pronounced when these changes are considered alongside other already established rules, like the HEI Rewards system. As CMS progresses with the review and finalization of these proposals, stakeholders are advised to thoroughly evaluate the potential impacts of these changes and strategize their integration into the operational structure of Medicare Advantage plans.

<sup>17</sup> Research Data Assistance Center. Master Beneficiary Summary File Base. Retrieved October 20, 2023, from <https://resdac.org/cms-data/files/mbsf-base/data-documentation>.

<sup>18</sup> CMS Health Equity Conference. Maksut, Jess, Meyyur, Vinitha, and Gaillot, Sarah. An Overview of CMS-Developed Indices Measuring Health and Health Care Equity / Disparity Performance. Page 34. [https://file-epsilonregistration-com.s3.amazonaws.com/26/354/pres/Day2/J-An+Overview+of+CMS+Developed+Indices/MaksutEtAl\\_An+Overview+of+CMS+Developed+Indices\\_508.pdf](https://file-epsilonregistration-com.s3.amazonaws.com/26/354/pres/Day2/J-An+Overview+of+CMS+Developed+Indices/MaksutEtAl_An+Overview+of+CMS+Developed+Indices_508.pdf).

<sup>19</sup> Note that this results in no contracts increasing Star Ratings, in contrast to the seven contracts increasing by 0.5 Stars in the simulations performed by CMS in the 2024 Final Rule, op cit.

## LIMITATIONS AND DATA RELIANCE

We primarily relied on information and data provided by CMS, including both publicly released membership data and projections for model impacts. We also relied on other information provided by additional sources, primarily relating to policy analysis. Throughout this analysis, Milliman relied on data and other information provided by publicly available data sources. The estimates included in this paper are not predictions of the future; they are estimates based on the assumptions and data analyzed at a point in time. If the underlying data or other listings are inaccurate or incomplete, then the results may also be inaccurate or incomplete. Milliman has not audited or verified this data and other information but has reviewed it for reasonableness.

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We have developed certain models to estimate the values included in this white paper. The intent of the models was to estimate the impact of the 2024 Star Rating methodology changes to contract-level Star Ratings. We have reviewed the models, including their inputs, calculations, and outputs, for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP). The models, including all input, calculations, and output, may not be appropriate for any other purpose.

The views expressed in this research paper are made by the authors and do not represent the opinions of Milliman, Inc. Other Milliman consultants may hold alternative views and reach different conclusions from those shown.

## QUALIFICATIONS

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. Hayley Rogers, Matthew Smith, and Mike Yurkovic are members of the American Academy of Actuaries and meet the qualification standards for performing the analyses in this paper.

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## CONTACT

Hayley Rogers  
[hayley.rogers@milliman.com](mailto:hayley.rogers@milliman.com)

Matthew H. Smith  
[matthew.smith@milliman.com](mailto:matthew.smith@milliman.com)

Mike Yurkovic  
[mike.yurkovic@milliman.com](mailto:mike.yurkovic@milliman.com)

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