

## Proposed Analytical Adjustments for Addressing Socio-economic and Disability Status for the Medicare Part C & D Star Ratings

*Center for Medicare*

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# Issue

A number of Medicare Advantage (MA) organizations and Prescription Drug Plan (PDP) sponsors believe that enrollment of a high percentage of dual eligible (DE) enrollees and/or enrollees who receive a low income subsidy (LIS) disadvantages their plan's ability to achieve high MA or Part D Star Ratings.

# Distinct Aspects of Issue: Quality Measurement and Payment

## Quality Measurement

- Response must focus on enhancing the ability to measure actual quality differences among contracts.

## Payment

- Response must focus on resource utilization and the predictive performance of the risk-adjustment models for the unique cost patterns of beneficiaries in the community.
  - *CMS is considering changes in the risk adjustment models for payment and is reviewing feedback received from a separate Request for Comments issued on 10/28/15.*

# Research: Goal and Findings

## Goal

- To provide the scientific evidence as to whether MA or Part D sponsors that enroll a disproportionate number of vulnerable beneficiaries are systematically disadvantaged by the Star Ratings.

## Findings

- The research to-date has provided scientific evidence that there exists a within-contract LIS/DE/disability effect for a subset of the Star Ratings measures.

# Policy Response

# Proposed Policy Response Considerations

The response must align with the goals of:

- Making adjustments that reflect the actual magnitude of the differences observed in the data;
- Providing valid quality ratings to facilitate consumer choice; and
- Providing incentives for MA and Part D quality improvement.

*CMS recognizes the need for the options to be both transparent and feasible for the plans, as well as to maintain the integrity of the Star Ratings and the core of its methodology.*

# Proposed Response

CMS is exploring two options for possible interim analytical adjustments to address the LIS/DE/disability effect revealed in our research:

- *Categorical Adjustment Index (CAI)*
- *Indirect Standardization (IS)*

# Request for Comments

CMS is requesting feedback on the two interim analytical adjustments under consideration and possible permutations of each option.

The next set of slides provides the working definitions for key terms and the steps for the calculations for the analytical adjustments being considered.

# Definitions

# Definitions: LIS/DE and Disability Status

**LIS/DE** - Beneficiaries who qualify at any point in the year for a low income subsidy through the application process and/or who are full or partial Dual (Medicare and Medicaid) beneficiaries.

**Disability Status** - Based on the original reason for entitlement for Medicare.

# Star Ratings Measures

- The measures used for the Star Ratings Program are consensus-based.
- The measure scores cannot be case-mix adjusted unless required by the measure specification.
- Measure specifications can only be changed by the measure steward (the owner and developer of the measure).
- Measure re-specification is a multi-year process.
- Measure developers are reviewing their measures to determine if re-specification is warranted.

# Categorical Adjustment Index (CAI)

# Prior Stakeholders' Comments

A number of comments received during last year's Request for Comments suggested CMS add a factor to the Summary and/or Overall Star Ratings based on a contract's percentage of LIS/DE beneficiaries.

# Overview: Categorical Adjustment Index

- Based on stakeholder comments and data-driven.
- An adjustment factor that would be added to a contract's unadjusted Summary and Overall Star Ratings to account for the average within-contract disparity. (The adjustment factor for the Overall Star Rating would be different than the Part C and Part D Summary adjustment factors.)
- Contracts are categorized by ranges of percentages of LIS/DE and disabled. All contracts within each final adjustment category receive the same value.
- Adjustment factors will be computed separately for MA-PD and PDP contracts.
- The adjustment factor could be computed using one of two approaches:
  - Based on the current year of Star Ratings data, or
  - Based on a prior year of data, such that contracts would know the adjustment factor in advance.

We request comments on this aspect of the methodology.

# **Steps to Determine the Categorical Adjustment Index**

# Categorical Adjustment Index

**Step 1:** Determine the contract's adjusted measure-level Star Ratings



**Step 2:** Calculate the adjusted Summary and Overall Star Ratings



**Step 3:** Determine the final adjustment categories



**Step 4:** Determine the values of the CAI for each final adjustment category



**Step 5:** Add the CAI factor to each contract's unadjusted Summary or Overall Star Ratings, based on their percentage of LIS/DE/disability category

# Categorical Adjustment Index

- The proposed analytical adjustment begins at the basic building block of the Star Ratings System, the measure.
- The index values mimic the impact of measure-level case-mix adjustment.

# Step 1A: Measure Selection

Select the measures that will be adjusted.  
We welcome comments on the specific measures that should be adjusted.

**Note:** Our preliminary research examined 16 measures: Adult BMI Assessment, Rheumatoid Arthritis Management, Breast Cancer Screening, Controlling Blood Pressure, Diabetes Care – Blood Sugar Controlled, Diabetes Care – Eye Exam, Diabetes Care – Kidney Disease Monitoring, Colorectal Cancer Screening, Osteoporosis Management in Women who had a Fracture, Plan All-Cause Readmissions, Annual Flu Vaccine, Monitoring Physical Activity, Reducing the Risk of Falling, Medication Adherence for Diabetes Medications, Medication Adherence for Hypertension, and Medication Adherence for Cholesterol.

***The measures to be adjusted would be selected from these 16.***

# Step 1B: Adjusted Measure Scores

For the measures selected in Step 1A, adjusted contract measure scores are determined based on the results from beneficiary-level regression models.

- The regression models quantify the relationship between the measure score of interest and LIS/DE and disability status, controlling for between contract differences.
- A similar approach is currently used to adjust CAHPS patient experience measures used in Star Ratings.

## Step 1B: Adjusted Measure Scores, continued

The models adjust for the average within-contract differences in measure scores by LIS/DE and/or disability status for MA and/or PDP contracts.

*The measure score adjustment is done without masking potential differences in quality across contracts.*

*Note: The models do not include any covariates other than LIS/DE status, disability status, and contract.*

# Step 1C: Adjusted Measure-level Star Ratings

The adjusted contract-level score is converted to a measure-level Star Rating.

- The unadjusted measure cut points for the given Star Ratings year are used for the conversion to the measure-level Star Rating.

**Note:** For Part D measures, CMS calculates cut points separately for MA-PDs and PDPs.

# Step 1 Summary

A	B	C	D	E
Measure	Unadjusted Measure Score	Adjusted Measure Score	Unadjusted Measure-level Star Ratings	Adjusted Measure-level Star Ratings

**Column A:** Step 1A – The measures for adjustment are selected.

**Column B:** The contract’s reported unadjusted measure score is recorded.

**Column C:** Step 1B – A beneficiary-level regression model with indicators of LIS/DE/disability status and contract fixed effects is employed. The model is used to determine the contract’s adjusted measure score for each measure listed in Column A. All other measures used to determine the Summary and Overall Star Ratings for the year follow the standard process as noted in the *Star Rating Technical Notes*.

**Column D:** The contract’s unadjusted measure score is converted to a Star Rating using the unadjusted measure cut points for the given Star Ratings year.

**Column E:** Step 1C – The contract’s adjusted measure score is converted to a Star Rating using the unadjusted measure cut points for the given Star Ratings year.

## **Step 2A: Unadjusted Summary and Overall Star Ratings**

The Summary and Overall Star Ratings are calculated using unadjusted measure stars.

## Step 2B: Adjusted Summary and Overall Star Ratings

The adjusted Summary and Overall Star Ratings are calculated using the adjusted measure-level Star Ratings (for those measures adjusted in Step 1) and all other measure-level Star Ratings.

***Note:** The values calculated in this step are referred to as 'adjusted' because they include the adjusted measure scores. Not all Star Ratings measures are adjusted.*

# Step 2 Summary

F	G	H	I	J	K	L
Contract	Overall Rating	Part C Summary Rating	Part D Summary Rating	Adjusted Overall Rating	Adjusted Part C Summary Rating	Adjusted Part D Summary Rating

**Column F:** The table contains information for each contract that receives a rating for the given Star Ratings year. The values are used for determining the values for the index only.

**Column G:** The contract's unadjusted Overall Rating.

**Column H:** The contract's unadjusted Part C Summary Rating.

**Column I:** The contract's unadjusted Part D Summary Rating.

**Column J:** The contract's Overall Rating using adjusted measure stars.

**Column K:** The contract's Part C Summary Rating using adjusted measure stars.

**Column L:** The contract's Part D Summary Rating using adjusted measure stars.

# Step 3A: Initial Categories for Contracts

Contracts are categorized based on the percentage of LIS/DE and/or disabled beneficiaries enrolled in the contract.

- For example, contracts could be grouped into 10 categories corresponding to the 10 deciles of LIS/DE or 16 categories based on the combinations of LIS/DE quartiles and disability quartiles.
- Other groupings are possible.

# Step 3B: Adjusted and Unadjusted Means

Within each category, the mean adjusted and unadjusted Star Ratings are computed

- Part C Summary
- Part D Summary
- Overall

## Step 3C: Differences between Mean Adjusted and Unadjusted Star Rating in Initial Categories

Compute within each of the initial categories, the difference between the mean adjusted and unadjusted Summary and Overall Star Ratings.

# Step 3D: Final Adjustment Categories

The mean differences of the initial categories are examined and combined into final adjustment categories such that initial categories with similar means are aggregated to form the final adjustment categories.

We welcome comments on the number of final adjustment categories.

## Step 3 Summary

The example is **not** based on real data.

For ease of presentation, the example focuses on only adjusting for LIS/DE status.

Further, the CAI in the example is for the adjustment of the Overall Star Rating.

# Step 3 Summary

The contracts are divided into categories based on some combination of the percentage of LIS/DE and/or disabled beneficiaries enrolled in the contract. In this example, the contracts are divided into 10 LIS/DE groups.

Decile	Number of Contracts	Mean percentage LIS/DE in decile
1	45	0.022
2	46	0.051
3	45	0.071
4	46	0.095
5	45	0.115
6	46	0.149
7	46	0.218
8	45	0.413
9	46	0.777
10	45	0.998

# Step 3 Summary

The mean difference in the adjusted Overall Star Ratings and unadjusted Star Ratings are calculated for each category.

Decile	Number of Contracts	Mean Difference in Adjusted Overall Star Rating and Unadjusted Star Rating
1	45	-0.051
2	46	-0.053
3	45	-0.054
4	46	-0.049
5	45	0.013
6	46	0.010
7	46	0.011
8	45	0.009
9	46	0.031
10	45	0.049

# Step 3 Summary

The mean differences are examined and categories are collapsed where the magnitude of the mean difference is similar.

The final adjustment categories for this example would be comprised of the following deciles:

- Category 1: deciles 1 – 4
- Category 2: deciles 5 – 8
- Category 3: decile 9
- Category 4: decile 10

Decile	Number of Contracts	Mean Difference in Adjusted Overall Star Rating and Unadjusted Star Rating
1	45	-0.051
2	46	-0.053
3	45	-0.054
4	46	-0.049
5	45	0.013
6	46	0.010
7	46	0.011
8	45	0.009
9	46	0.031
10	45	0.049

## Step 4: Mean Star Adjustment using Final Adjustment Categories and CAI

After collapsing the initial categories, the mean difference between the adjusted Summary and Overall Star Ratings and the unadjusted Star Ratings is computed within each of the final adjustment categories.

The mean differences between the adjusted and unadjusted Overall Star Ratings (or Summary Star Ratings) per final adjustment category are the values of the CAI.

# Step 4 Summary

After collapsing the categories, the mean differences in adjusted Overall Star Rating and unadjusted Star Rating are calculated per category and these become the values of the CAI.

<b>Category of contract, based on % LIS/DE</b>	<b>Mean % LIS/DE in Category</b>	<b><u>Categorical Adjustment Index</u> (Mean Difference in Adjusted Overall Star Rating and Unadjusted Star Rating)</b>
<b>1st-4th deciles</b>	0.060	-0.052
<b>5th-8th deciles</b>	0.223	0.011
<b>9th decile</b>	0.777	0.031
<b>10th decile</b>	0.998	0.049

## Step 5: Application of the Categorical Adjustment Index

The adjusted Star Rating is computed by adding the CAI value to a contract's unadjusted Summary and Overall Star Ratings.\*

- The CAI value is the same for all contracts within each final adjustment category.

*\*The index values would be specific for Overall, Part C Summary and Part D Summary Ratings.*

# Step 5 Summary

For this example each contract, based on its final adjustment category, would have its Overall Star Rating adjusted by the value indicated in the table below.

<b>Category of contract, based on % LIS/DE</b>	<b>Mean % LIS/DE in Category</b>	<b><u>Categorical Adjustment Index</u> <i>(Mean Difference in Adjusted Overall Star Rating and Unadjusted Star Rating)</i></b>
<b>1st-4th deciles</b>	0.060	-0.052
<b>5th-8th deciles</b>	0.223	0.011
<b>9th decile</b>	0.777	0.031
<b>10th decile</b>	0.998	0.049

# Indirect Standardization (IS)

# Overview: Indirect Standardization

- Applied to a subset of the Star Ratings measures.
- Contract performance is judged against expected performance based on the composition of contract enrollment.
- Expected performance is calculated by taking into account the within-contract LIS/DE and/or disability status differences.

## **Steps to Determine the Adjusted Summary and Overall Star Ratings using Indirect Standardization**

# Indirect Standardization

**Step 1:** Compute the expected measure score



**Step 2:** Calculate the adjusted measure score



**Step 3:** Calculate the adjusted measure-level star



**Step 4:** Calculate the adjusted Summary and Overall Star Ratings

# Indirect Standardization

The proposed analytical adjustment begins at the basic building block of the Star Ratings System, the measure.

# Step 1A: Measure Selection

Select the measures that will be adjusted.  
We welcome comments on the specific measures that should be adjusted.

**Note:** Our preliminary research examined 16 measures: Adult BMI Assessment, Rheumatoid Arthritis Management, Breast Cancer Screening, Controlling Blood Pressure, Diabetes Care – Blood Sugar Controlled, Diabetes Care – Eye Exam, Diabetes Care – Kidney Disease Monitoring, Colorectal Cancer Screening, Osteoporosis Management in Women who had a Fracture, Plan All-Cause Readmissions, Annual Flu Vaccine, Monitoring Physical Activity, Reducing the Risk of Falling, Medication Adherence for Diabetes Medications, Medication Adherence for Hypertension, and Medication Adherence for Cholesterol.

***The measures to be adjusted would be selected from these 16.***

## Note

The focus of the standardization in the slide deck is LIS/DE status, but the same method can be expanded to more than two subgroups and include standardization for disability and non-disability status.

# Step 1B: National Means

For each measure selected for IS, the adjusted national mean performance for LIS/DE and non-LIS/DE beneficiaries is determined.

- The group-specific means are contract-adjusted performance rates. Adjusting for contract limits the difference in means to the within-contract LIS/DE and/or disability status differences.

The overall national mean performance for each measure is determined. *(The overall national mean for a measure is equivalent to the adjusted overall national mean.)*

# Step 1C: Expected Measure Score

Determine for each contract the percentage of LIS/DE and non-LIS/DE for each measure selected for adjustment.

- The percentage of LIS/DE beneficiaries can vary measure to measure.
- Depending on the measure, contracts may produce the measure using the hybrid or administrative data approach.

The expected measure score is calculated for each selected measure for each contract by multiplying the contract's measure proportion of LIS/DE and non-LIS/DE by the corresponding adjusted national rates for LIS/DE and non-LIS/DE.

*Note: If we also adjust for disability status, four percentages would be calculated per measure per contract.*

# Step 1 Summary

For each measure selected, the adjusted national mean measure score for LIS/DE enrollees, non-LIS/DE enrollees, and overall national mean is determined (values A, B, and C).

Adjusted National Measure-specific Values	Adjusted Performance for LIS/DE Beneficiaries	Adjusted Performance for non-LIS/DE Beneficiaries	Adjusted Overall National Mean Measure Score
	A	B	C

The expected performance for each measure is calculated by multiplying the contract's proportion of LIS/DE and non-LIS/DE by the adjusted national values.

Contract	Proportion of LIS/DE Beneficiaries	Proportion of non-LIS/DE Beneficiaries	Observed (Actual) Performance	Expected Performance (Based on composition of contract)
1	D	E	F	G

$$\text{Expected Performance (G)} = (A \times D) + (B \times E)$$

# Step 2A: Ratio of the Observed to Expected Performance for a Measure

For each measure selected for standardization, calculate the ratio of the contract's observed to expected measure score by dividing the observed (actual) measure score by the expected measure score.

- A ratio would *equal one* for a contract that performed at the level expected given their percentages of LIS/DE and/or disabled beneficiaries and indicates average performance.
- A ratio *less than one* indicates lower observed performance than expected given the contract's percentage of LIS/DE and/or disabled beneficiaries.
- A ratio *greater than one* indicates better than expected performance given the contract's percentage of LIS/DE and/or disabled beneficiaries.

## Step 2B: Adjusted Measure Score

The ratio (determined in Step 2A) is multiplied by the adjusted overall national mean performance score (determined in Step 1B). The product is the contract's adjusted measure score.

**Adjusted Measure Score** = (Adjusted Overall National Mean Measure Score) x (Ratio of Observed to Expected Performance)

# Step 2 Summary

The ratio of the observed (actual) to expected performance is calculated for each measure selected for standardization per contract:  $\text{Ratio} = F/G$

Contract	Overall Observed (Actual) Performance	Expected Performance (Based on the composition of the contract's enrollees)
1	F	G

Next, the ratio is multiplied by the adjusted overall national mean performance score for the measure. The product is the adjusted measure score.

## Step 3: Adjusted Measure-Level Star

The adjusted measure score is converted to an adjusted measure-level Star Rating. This conversion is done for each measure selected for IS.

- The unadjusted measure cut points for the given Star Ratings year are used for the conversion to the measure-level Star Rating.

**Note:** For Part D measures, CMS calculates cut points separately for MA-PDs and PDPs.

## Step 4: Adjusted Overall Star Rating

The adjusted Summary and Overall Star Ratings are calculated using the adjusted measure-level stars determined in Step 3.

- The adjusted Summary and Overall Star Ratings could go up, down, or remain the same as the unadjusted ratings.

**Note:** The reference to ‘adjusted’ is used to indicate that a subset of the measures were indirectly standardized and converted to a measure-level star before entering the Star Ratings algorithm.

# **Comparison of Indirect Standardization to Categorical Adjustment Index**

# Similarities between Options

- Applied to a subset of the Star Ratings measures.
- The focus of the interim adjustment is the within-contract differences.
- Adjustments at the Summary and Overall levels could be positive or *negative*.
- Plan Finder would display the unadjusted measure and domain scores and the adjusted Summary and Overall Star Ratings.

# Differences between Options

- For each contract, IS adjusts the selected measure scores to determine an adjusted set of measure stars to calculate the Summary and Overall Star Ratings.
- For each contract, IS requires calculating the observed to expected ratio for each selected measure.
- CAI is applied at the Summary and Overall Star Rating *(similar to the “Reward Factor”)* and *mimics the impact of case-mix adjustment.*
- CAI groups similar contracts by percentage of LIS/DE and/or disabled and applies the same empirically-derived adjustment for all contracts within the category.

## Differences, continued

IS must be based on the current year's data to get observed and expected values.

CAI could be based on the prior year's data to provide contracts with the CAI values in advance of the plan rating year.

# Questions

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