ACTUARIAL STANDARDS BOARD

● **EXPOSURE DRAFT** ●

Proposed Revision of
Actuarial Standard
of Practice
No. 45

The Use of Health Status-Based Risk Adjustment Methodologies

Comment Deadline:
September 1, 2026

Developed by the
ASOP No. 45 Task Force of the
Health Committee of the
Actuarial Standards Board

Approved for Exposure by the
Actuarial Standards Board
March 2026

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March 2026

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Use of Health Status-Based Risk Adjustment Methodologies

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Revision of Actuarial Standard of Practice (ASOP) No. 45

This document contains the exposure draft of a proposed revision of ASOP No. 45, *The Use of Health Status-Based Risk Adjustment Methodologies*. Please review this exposure draft and give the ASB the benefit of your comments and suggestions. Each comment letter received by the comment deadline will receive consideration by the drafting committee and the ASB.

The ASB appreciates comments and suggestions on all areas of this proposed standard. The ASB requests comments be provided using the Comments Template that can be found here and submitted electronically to comments@actuary.org. Include the phrase ["ASOP No. 45 COMMENTS"] in the subject line of your message. Also, please indicate in the template whether your comments are being submitted on your own behalf or on behalf of a company or organization.

The ASB posts all signed comments received on its website to encourage transparency and dialogue. Comments received after the deadline may not be considered. Anonymous comments will not be considered by the ASB nor posted on the website. Comments will be posted in the order that they are received. The ASB disclaims any responsibility for the content of the comments, which are solely the responsibility of those who submit them.

For more information on the exposure process, please see the ASB Procedures Manual.

Deadline for receipt of comments: **September 1, 2026**

History of the Standard

Health status-based risk adjustment methodologies have been an important tool in the health insurance marketplace since the 1970s. The use of risk adjustment has significant effects on health insurance companies, healthcare providers, consumers, employers and others. The importance and influence of health status-based risk adjustment methodologies are likely to increase as healthcare programs that currently use risk adjustment expand the populations they cover and other programs adopt the use of risk adjustment. ASOP No. 12, *Risk Classification (for All Practice Areas)*, provides guidance to "all actuaries when performing professional services with respect to designing, reviewing, or changing risk classification systems used in connection with financial or personal security systems." It applies more broadly than this ASOP. This ASOP was developed in 2012 and is intended to provide guidance regarding the appropriate use of health status-based risk adjustment models and methods. The proposed revision reflects

developments in risk adjustment practices since 2012, including expanded use of non-linear models and new sources of data.

Notable Changes from the Existing Standard

Notable changes from the existing standard are summarized below. Notable changes do not include changes made to improve readability, clarity, or consistency.

1. Section 1.2, Scope, was revised to explicitly exclude actuarial services with respect to designing, reviewing, or modifying risk adjustment models.

2. Section 3.1.4, Population and Program (now section 3.2.4, Population, Program, and Services), was revised to require the actuary to confirm rather than consider specified items and include "services."

3. Section 3.3, Input Data, was revised to better capture concepts related to quality and consistency of input data across organizations and time periods, and with the data used to develop the models.

4. Section 3.8, Budget or Cost Neutrality, (now section 3.7, Payment Objectives), discussing budget neutrality was broadened to encompass payment objectives.

5. Section 4.1, Required Disclosures in an Actuarial Report, was expanded to include requirements related to section 3.

The ASB voted in March 2026 to approve this exposure draft.

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

EXPOSURE DRAFT—March 2026

PROPOSED REVISION OF ACTUARIAL STANDARD OF PRACTICE NO. 45

THE USE OF HEALTH STATUS-BASED RISK ADJUSTMENT METHODOLOGIES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to selecting or using health status-based **risk adjustment** models to quantify differences in **morbidity** across organizations, populations, programs or time periods.

1.2 Scope—This standard applies to actuaries when performing actuarial services with respect to selecting or using health status-based **risk adjustment** models to quantify differences in **morbidity** across organizations, populations, programs or time periods. It does not apply to actuaries when designing, reviewing, or modifying health status-based **risk adjustment** models (including **recalibration**). Actuaries who perform actuarial services with respect to designing, reviewing, or modifying **risk adjustment** models should refer to ASOP No. 12, *Risk Classification (for all Practice Areas)* and ASOP No. 56, *Modeling*. This ASOP does not apply to actuaries when performing actuarial services related to **programs** that establish health-related obligations for an extended period of time (for example, more than 24 months).

If a conflict exists between this standard and applicable law (statutes, regulations, and other legally binding authority), the actuary should comply with applicable law. If the actuary departs from the guidance set forth in this standard in order to comply with applicable law or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should follow the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for any actuarial work product covered by this standard's scope on or after four months after adoption by the Actuarial Standards Board.

Section 2. Definitions

The terms below are defined for use in this standard and appear in bold throughout the ASOP. The actuary should also refer to ASOP No. 1, *Introductory Actuarial Standard of Practice*, for definitions and discussions of common terms, which do not appear in bold in this standard.

2.1 Coding—The process of recording and submitting information (for example, diagnoses or services provided) on claims forms.

2.2 Credibility—A measure of the predictive value in a given application that the actuary attaches to a particular body of data ("predictive" is used here in the statistical sense and not in the sense of predicting the future).

2.3 Morbidity—The incidence of or resource use associated with a disability, medical condition, or group of conditions.

2.4 Program—Any health benefit program, including commercial and employer sponsored health insurance, self-funded employer health insurance, and government sponsored health coverage, such as Medicaid and Medicare.

2.5 Recalibration—The process of adjusting a **risk adjustment** model to be more specifically tailored to the population, data, or other characteristics of the **program** for which it is being used.

2.6 Risk Adjustment—The process of assigning relative risk factors (numerical risk factors are often called "risk scores") to individuals or groups based on **morbidity** using a model and applying those factors using an implementation methodology.

Section 3. Analysis of Issues and Recommended Practices

3.1 Overview—**Risk adjustment** includes the use of a **risk adjustment** model and an implementation methodology. After using the **risk adjustment** model to assign relative risk factors to individuals or groups, the implementation methodology generally includes:

a. making adjustments to the relative risk factors consistent with the intended use, as **risk adjustment** model output is often not appropriate for the intended use without such adjustments; and

b. applying the adjusted relative risk factors to payments or other figures, consistent with the goal of **risk adjustment** (for example the goal may be paying health plans the correct amount or normalizing two populations to be comparable).

Depending on the actuary's assignment, the **risk adjustment** model may be selected by the actuary or another party. Similarly, the implementation methodology may be selected or designed by the actuary or another party.

3.2 Model and Implementation Methodology Selection—When selecting a **risk adjustment** model or implementation methodology, the actuary should confirm that the model and implementation methodology, taken together, are reasonably appropriate.

3.2.1 Intended Use—When selecting a **risk adjustment** model, the actuary should take into account whether its purpose is consistent with the intended use. For example, the model may have been developed to estimate differences in total allowed costs, while the actuary may be trying to measure or project differences in paid costs for a high-deductible plan, or differences in allowed costs for a single service category such as pharmacy.

When selecting an implementation methodology to use with a model whose purpose is not reasonably consistent with the intended use, the actuary should select an implementation methodology that takes into account any material inconsistencies.

3.2.2 Impact on Behavior—The actuary should assess whether the selected **risk adjustment** model or implementation methodology may cause changes in behavior because of underlying incentives and whether those potential changes are consistent with the goals of **risk adjustment**. For example, inclusion of a health care provider's prior claim costs in a model used to adjust payments to providers may incentivize providers to increase utilization or utilization of high-cost services to increase risk adjusted revenue.

If the potential changes in behavior are not consistent with the goals of **risk adjustment**, the actuary should consider selecting a different model or implementation methodology.

3.2.3 Model Version—If the actuary is selecting a **risk adjustment** model for which multiple versions are available, the actuary should confirm that the selected version is appropriate for the purpose. When doing so, the actuary may compare the model versions and assess the materiality of the differences.

3.2.4 Population, Program, and Services—The actuary should confirm that the population, **program**, and services for which risk adjustment is being used are reasonably consistent with those used to develop the **risk adjustment** model. For example, some models are intended for a commercial population and **program** while others are intended for Medicare or Medicaid. In addition, the set of covered services may vary between **programs** or contracts.

3.2.5 Time Periods Used in Model Development and Application—Models are often applied to data from a different time period than was used to develop the model. The actuary should evaluate whether there are material changes over time in **coding** practices, healthcare patterns, or other factors between the data used to develop the **risk adjustment** model and the data to which the model will be applied. If the actuary determines that such differences are likely to have a material impact on the

analysis, the actuary should consider making appropriate adjustments to the model or implementation methodology, which may include **recalibration**, updating the codes included in the model, or adjusting the **risk adjustment** results.

3.2.6 Transparency—When selecting the **risk adjustment** model, the actuary should take into account whether the model affords the level of transparency that is appropriate for the intended use. For example, some commercially available models do not allow the logic used to assign risk factors to be published.

3.2.7 Predictive Accuracy—The actuary should take into account how limitations in predictive accuracy of the **risk adjustment** model may impact the reliability and usefulness of results. The actuary should evaluate metrics of predictive accuracy that align with the application of the model. For example, if the model will be used to classify individuals into discrete cohorts, classification metrics may be more appropriate than metrics designed for measuring the performance of the application of model output as a continuous variable, such as r-squared.

The actuary should also consider evaluating metrics of predictive accuracy on sub-populations, for example by age cohort, to determine if there are any segments of the population where predictive accuracy may impact the appropriateness of the model for its intended use.

3.2.8 Practical Considerations—The actuary should take into account practical limitations and issues with any given **risk adjustment** model and implementation methodology including the cost of the model, the actuary's and other stakeholders' familiarity with the model, and its availability.

3.3 Input Data—The actuary should assess, to the extent practical, the degree to which the attributes of the input data are consistent with those of the data used to develop the **risk adjustment** model. When **risk adjustment** is used on multiple populations or time periods, the actuary should also assess the degree to which the input data is consistent across those elements.

If data consistency is not possible or cannot be reasonably evaluated, the actuary should consider documenting why the combination of that input data and the selected model was used, and any adjustments made to the data, model, or methodology to address limitations in the data. Adjustments may include blending of risk adjusted results or risk scores with values from another source, the use of alternate models, and adjustment for changes in **coding** over time or across organizations.

When performing assessments of consistency as described above, the actuary should follow the guidance below, as applicable:

3.3.1. Credibility—The actuary should evaluate the **credibility** of the input data (refer to ASOP No. 25, *Credibility Procedures*, for further guidance).

3.3.2. Coding Issues—Because **risk adjustment** model results are affected by the accuracy and completeness of diagnosis codes or services coded and available, the actuary should take into account the impact of differences in the accuracy and completeness of **coding** across organizations and time periods. This standard does not require the actuary to quantify the portion of measured **morbidity** differences due to **coding** or other data issues and the portion due to true **morbidity** differences.

3.3.3. Limited Data—When the input data contains individuals with limited data, the actuary should evaluate the impacts of any data limitations on assigned risk factors and potential options to address them. Such options may include assigning risk factors using age/gender, average risk scores for similar individuals or groups, or other available data. If no acceptable options are available, the actuary may consider excluding individuals with limited data from the analysis.

3.3.4 Provider Contracts—When practical, the actuary should take into account differences in provider contracts and the potential impact of these differences on the **risk adjustment** results. For example, one organization may pay fee for service and another may pay capitation. This can cause significant differences in **risk adjustment** results based on differences in **coding** rather than **morbidity**.

3.3.5 Diagnostic Services—The actuary should determine how the **risk adjustment** model handles **diagnostic services** and whether data for those services should be included in the input data. Diagnostic services (for example, lab or radiology) are provided to determine whether or not a medical condition exists. Having these services performed does not necessarily indicate a condition exists, although the result of a test may indicate it does.

3.3.6 Timing—The actuary should determine if there are differences between the **risk adjustment** model input data and development data with respect to timing such as the length of the assessment period and claims run-out period. If, in the actuary's professional judgment, any such differences are likely to have a material impact on results, the actuary should consider adjusting the results. For example, if there are differences in claims run-out, the actuary may use completion factors to make an adjustment.

3.4 Program Specifics—The actuary should determine if the **risk adjustment** model and implementation methodology appropriately account for the specifics of the **program** for which **risk adjustment** is being used. For example, ignoring reinsurance, when present, may affect the appropriateness of the results for high-cost individuals.

3.5 Recalibration—The actuary should consider recalibrating the **risk adjustment** model taking into account the intended use, available resources, materiality of expected changes in results, applicability of how the model was calibrated, level of transparency afforded by the model, and limitations in the data available for **recalibration**. When performing **recalibration**, the actuary should refer to ASOP Nos. 12 and 56.

3.6 Use in Combination with Adjustments—When a **risk adjustment** model is used in combination with adjustments for factors such as age, gender, industry or area, the actuary should determine whether those adjustments capture differences in **morbidity** that are also captured by the model. If so, the actuary should consider making modifications to the implementation methodology that mitigate such duplication. For example, age and gender factors are commonly used when developing premium rates, and **risk adjustment** models may already account for expected differences in **morbidity** that are captured by the age and gender factors. In this case, if the model is being used to develop premium rates, an adjustment may be appropriate.

3.7 Payment Objectives—**Risk adjustment** models may be used to adjust payments to **program** participants, such as insurance premiums, provider capitation payments or value-based incentive payments. If the model is used to adjust payments to **program** participants based on a specified payment objective, the actuary should evaluate if the implementation methodology is consistent with the payment objective.

Examples of payment objectives include the following:

a. "Zero Sum" Payment Transfer among multiple participants—The **program** distributes payments such that the sum of all positive and negative transfer amounts is equal to $0.

b. Payment Target—The **program** distributes payments such that the sum of all **program** payments meets a predetermined aggregate or per unit amount. This target may be set on an aggregate or per unit basis (for example, per member per month).

c. Variable Payments—The **program** distributes payments that vary with **morbidity** or other specified factors but without a specified payment target.

If an inconsistency is identified, the actuary should adjust the implementation methodology as necessary to achieve the payment objective. Adjustments may include normalizing the **risk adjustment** output to a target average, **coding** intensity adjustments, updating the reference period, **recalibration**, updating the model version or other adjustments as appropriate.

3.8 Reliance on Another Party—When relying on another party and thereby disclaiming responsibility for:

a. data and other information relevant to the use of data, the actuary should refer to ASOP No. 23, *Data Quality*.

b. a model, the actuary should refer to ASOP No. 56.

c. assumptions or methods prescribed by another party, the actuary should review the assumption or method for reasonableness and consistency to the extent practicable and appropriate within the scope of the actuary's assignment.

d. any other item not addressed above (including assumptions or methods provided, but not prescribed by another party), the actuary should review the item for reasonableness and consistency to the extent practicable and appropriate within the scope of the actuary's assignment. In addition, the actuary should be reasonably satisfied that the reliance is appropriate, taking into account the following, as applicable:

1. when the other party is an actuary, whether the actuary knows that the other party is appropriately qualified and has followed applicable ASOPs;

2. whether the actuary knows that the other party has expertise in the applicable field;

3. whether the actuary knows the other party's stated purpose for the item and the extent to which it is consistent with the actuary's intended purpose; and

4. whether the actuary knows of differences of opinion within the other party's field of expertise that are material to the actuary's use of the item.

3.9 Documentation—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. If preparing documentation, the actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41, *Actuarial Communications*, for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures:

4.1 Required Disclosures in an Actuarial Report—When issuing an actuarial report, the actuary should refer to ASOP Nos. 23, 25, 41, and 56. In addition, when the report describes the selection of a risk adjustment model or implementation methodology, the actuary should disclose the following in such actuarial report, if applicable:

a. if the actuary has selected a **risk adjustment** model whose purpose is not consistent with the intended use, how the selected implementation methodology accounted for material inconsistencies (see section 3.2.1);

b. potential changes in behavior due to the selected **risk adjustment** model or implementation methodology and any adjustments made to address resulting inconsistencies (see section 3.2.2);

c. adjustments made to account for changes over time in coding practices, healthcare patterns, or other factors in the data used in **risk adjustment** model development and application (see section 3.2.5);

d. limitations in predictive accuracy that are expected to impact the reliability or usefulness of **risk adjustment** model results, if any (see section 3.2.7);

In addition, when the report describes the use of **risk adjustment** models, the actuary should disclose the following in such actuarial report, if applicable:

e. if data consistency was not possible, any adjustments made to address limitations (see section 3.3);

f. the procedures used to evaluate the **credibility** of the input data, and any material changes from prior procedures used (see section 3.3.1);

g. any adjustments made to reflect the expected impact of differences in **coding** patterns across organizations and time periods (see section 3.3.2);

h. the impact of any data limitations on assigned risk factors and any steps taken to address them (see section 3.3.3);

i. any differences in provider contracts that are expected to have a material impact on **risk adjustment** results (see section 3.3.4);

j. any adjustments made to reflect timing differences between the **risk adjustment** model input data and development data (see section 3.3.6);

k. specifics of the program not appropriately accounted for by the **risk adjustment** model and implementation methodology, if any (see section 3.4);

l. if the **risk adjustment** model was recalibrated for the purpose of the assignment (see section 3.5);

m. any modifications made to the **risk adjustment** results or the implementation methodology to account for duplication of adjustments (see section 3.6); and

n. any adjustments made to the implementation methodology to achieve consistency with the specified payment objective (see section 3.7).

4.2 Additional Disclosures in an Actuarial Report—The actuary also should include disclosures in an actuarial report in accordance with ASOP No. 41 for any of the following circumstances:

a. if any material assumption or method was prescribed by applicable law;

b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method set by a party other than the actuary (see section 3.8); or

c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this standard.

4.3 Confidential Information—Nothing in this standard is intended to require the actuary to disclose confidential information.

Appendix

Background and Current Practices

Background

Health status-based risk adjustment methodologies have been an important tool in the health insurance marketplace since the 1970s. The use of risk adjustment has significant effects on health insurance companies, healthcare providers, consumers, employers and others. Its importance and influence are likely to increase as healthcare programs that currently use risk adjustment expand the populations they cover, and other programs adopt the use of risk adjustment.

Risk adjustment is a powerful tool in the health insurance marketplace. Risk adjusters allow health insurance programs to measure the morbidity of the members within different groups and pay participating health plans fairly. In turn, risk adjustment enables health plans to better protect themselves against adverse selection and arguably to be more likely to remain in the marketplace. This in turn increases competition and choice for consumers.

Risk adjusters also provide a useful tool for health plan underwriting and rating. They allow health plans to more accurately estimate future costs for the members and groups they currently insure.

Current Practices

Risk adjustment is widely used in government programs including Medicare Advantage, state Medicaid, and healthcare reform programs. In addition, it is used in provider payment, medical management, employer multi-option contribution setting and in many other applications that require objective estimation of morbidity.

Actuaries typically use models developed by commercial vendors or publicly available models such as CDPS, MedicaidRx or CMS' HCC models. Concurrent models are usually used to measure morbidity when the incurral and measurement periods are the same, while prospective models are usually used if the estimation period is after the incurral period.

Concurrent models are used to analyze historical resource use. Concurrent models can be used to determine compensation to providers for services rendered because they normalize costs across members with different health statuses. Normally, concurrent models provide an assessment of what resource use should have been for members, given the conditions with which they presented in the past year. Prospective models are used to estimate future resource use for a group of members.

The following are examples of using the risk adjustment model to assign risk scores. Examples 1 and 2 below are taken from the American Academy of Actuaries' May 2010 Issue Brief, titled "Risk Assessment and Risk Adjustment." These examples show how the risk scores for two

different 32-year-old males are developed based on their health claims history. (This is illustrative; not all risk adjustment models use this type of additive convention.)

Example 1: John Smith, age 32, has diabetes, asthma/COPD and dermatology diagnoses in his claims history.

Risk Marker	**Risk Weight**
Male, Age 32	0.22
Diabetes with significant co-morbidities	1.32
Asthma/COPD	0.96
Low-cost dermatology	0.30
Total Risk Score	**2.80**

The "Risk Weight" in the table above is the value assigned to each risk marker that indicates the expected contribution of that variable to an individual's morbidity; the "Total Risk Score" is equal to the sum of the demographic and condition risk weights. Risk scores are often stated relative to 1.0, with 1.0 being equal to the average expected risk score across the entire population. In this example, if scores are normalized to 1.0 across a population, a risk score of 2.8 implies that John Smith would be expected to cost 2.8 times an average member.

Example 2: Mark Johnson, age 32, has eligibility history but no claims.

Risk Marker	**Risk Weight**
Male, Age 32	0.22
Total Risk Score	**0.22**

In this example, the total risk score is equal to only the demographic risk weight and is much lower than the total risk score for John Smith. The estimated cost ratio using risk adjustment factors would be 0.22 / 2.80 or 0.079. Therefore, Mark Johnson's costs would be expected to be 7.9% of those of John Smith, and 22% of those of an average member.