Introduction

The methods that Medicaid Managed Care programs utilize the CDPS, MRx, and CDPS+Rx models to implement risk adjustment for participating Managed Care Organizations (MCOs) vary greatly. This document is intended to provide stakeholders with consistent guidance on proper usage of the CDPS model for Medicaid Managed Care risk score development. Considerations and recommended best practices for selection of appropriate data, development of risk scores, and model transparency have been included; however, this document is not exhaustive. Users should follow actuarial and industry best practices when developing risk scores.

Appropriate Data

To obtain meaningful and accurate results, it is critical that the data being used is appropriate for the intended risk adjustment. This section outlines a few data-related best practices for the CDPS model.

Model Update Frequency, Experience Periods and Snapshot Dates

Risk scores developed using the CDPS model should be updated at least once per year. It may be necessary to update risk scores more frequently during the rate period if large changes in enrollment occur (e.g., because one MCO drops out of the market, or a large number of beneficiaries gain or lose eligibility as a result of changes in eligibility rules).

Appropriate experience periods and enrollment snapshot dates should be used when developing risk scores with the CDPS model. For prospective risk adjustment, this typically means utilizing an experience period that is either aligned with or more recent than the period used for base data in rate setting. Enrollment snapshot dates should be as recent as possible to reflect the best estimate of the enrollment mix for the projection period. For programs with shifting enrollment, more frequent updates to the snapshot date may need to be considered.

Sometimes, there are circumstances where the gap between the experience period and the rating period is larger than what is typical (e.g., the COVID-19 pandemic). Such a scenario may impact accuracy by resulting in a reduction of the proportion of members that are scored and may need to be addressed through a custom adjustment as outlined in the “Unscored Members” section later in this document. Additionally, users should consider the impact of refreshing risk scores by updating snapshot dates more frequently (annually, semi-annually, quarterly, or even monthly) to account for factors such as changing enrollment.

Development of Risk Scores

When developing risk scores with the CDPS model, Medicaid program specific issues may present themselves and adjustments may be necessary. This section provides guidance on how to approach these types of issues related to using the CDPS model to develop risk scores.

Using State Specific Risk Weights

Rather than utilizing the standardized weights developed on national data, a state may choose to develop state specific weights in the hope that the state-specific weights may more closely reflect practice patterns and the MCO benefit package in the state. The following factors should be considered when developing state specific weights:

I. Credibility: Consideration should be given to if the state has sufficient volume of historical membership and claims data to develop credible risk weights, including at the population level (e.g., if developing separate TANF and Expansion weights). UCSD generally recommends a minimum of 140,000 disabled, 900,000 TANF children, or 600,000 TANF or expansion adult Medicaid beneficiaries to be sufficiently credible for generation of state-specific risk weights. More or less data may be needed depending on the specific population and data being analyzed (e.g., if only pharmacy claims are available or both medical and pharmacy claims; if a particularly diverse population is analyzed versus a more homogenous population such as only HIV/AIDS diagnosed members).

II. Data Quality: The quality of the state specific data should be evaluated for appropriateness, accuracy and completeness. This may include consideration of completeness of data at the MCO level, the number of available diagnosis codes, and the proportion of provider contracts which are capitated. Common data quality considerations for risk adjustment for Medicaid managed care include the following:
    a. Dual members are typically excluded from risk adjustment and therefore should not be included in the data set used to calculate state specific risk weights. Without Medicare covered payments, full diagnostic data isn't available. Further, the relationship between diagnoses and Medicaid spending is very different for dual eligibles than for Medicaid-only members.
    b. Changes in covered benefits between the period that was used to develop state-specific weights and the period risk adjustment is developed for may create a discrepancy between risk scores and the costs the risk scores are intended to adjust.

III. Covered Benefits: States may have carved out certain benefits from managed care coverage (e.g., behavioral health, certain drug classes), therefore actual cost relativities within a state may vary significantly from those in the national weights thus making state specific weights more predictive.

IV. Underlying Incentives: State specific weights are generally developed based on a regression model. However, an actuary may consider if manual adjustments are needed. For example, significant changes to treatment costs for a given condition may have occurred since the base period used to develop the weights (e.g., due to network changes or new pharmaceuticals), which would necessitate a manual adjustment. Adjustments that create a perverse incentive within the model should not be made (e.g., disincentive to control the cost and utilization of a drug class).

The following items should be considered in the validation of state specific risk weights:

V. Consistency of weights over time: Barring any material changes in the market, risk score weights should be relatively stable over time. If weights change materially over time, the cause should be evaluated. For example, the cost of treating certain conditions may change over time (e.g.,

Hepatitis C drugs which, initially, were very high cost and reduced in cost over time). Conversely, weights which change over time and cannot be attributed to valid changes in the cost of necessary care should be further evaluated to determine if the model is credible. Adjustments may be needed to data quality, model parameters, or the granularity chosen to improve predictivity of the risk scores.

VI. Comparison of state and national weights on a validation sample

Before a state implements state-specific weights, it should do the following:

a. Estimate the state-specific weights using 80% of the data as a development sample.
b. Apply the state-specific and, separately, the national weights to the 20% reserved validation sample.
c. Compare the predictive performance (MSE) of the state-specific weights and the national weights on the validation sample.

VII. Weight consistency with hierarchy: The hierarchical nature of the CDPS model should be considered when developing state specific weights. If state specific weights do not align with CDPS' inherent hierarchy (e.g., Cancer, very high weight is lower than the Cancer, medium weight), this may indicate a credibility, data quality or other issue that should be resolved. If weights do not align to the hierarchy, a clinically proven rationale should be disclosed in model documentation (e.g., pregnancy complete having a lower weight than pregnancy incomplete).

Durational Adjustments

Fewer diagnoses are typically reported for newly eligible beneficiaries because they have less time to see providers and accumulate diagnostic history. MCOs that are new entrants to the program, or incumbent MCOs that are favored by the state's enrollment auto-assignment algorithm may be at risk of having underreported risk scores if they have a higher proportion of new members. We recommend excluding members with less than 6 months of eligibility from the calculation of an MCO's risk score. If members with less than 6 months of eligibility are scored, it is recommended that a durational adjustment be applied to initial results from the CDPS model. This adjustment is to account for underreported diagnoses stemming from members eligible fewer than 6 months. Once a member has at least 6 months of eligibility, the durational impacts are much smaller. Occasionally, however, there are material durational impacts for members with up to 11 months of eligibility. Durational impacts for all members should be reviewed to mitigate this issue. One exception to this recommendation is newborns. New beneficiaries under one year of age should be included when calculating risk scores even with fewer than 6 months of enrollment.

Unscored Members

Members who do not meet the scoring criteria for risk adjustment are typically considered "unscored" members. Methodology to appropriately account for this population in risk adjustment will vary based on the specifics of the program. The larger and more stable the individual health plan populations are, the more the health plan can be assumed to attract and retain members with similar acuity and demographic characteristics as the existing population. Therefore, it is more appropriate in these situations to use the health plan average risk score for the unscored members.

Alternatively, when health plans are smaller or there is growing or otherwise shifting enrollment (i.e., from changes in auto assignment or new health plans entering the market) it is more appropriate to use

the program wide average risk score for the unscored members. In instances where it is unclear whether the program wide average or the health plan specific average is most appropriate to use, a weighting between the two could also be used.

The diversity of the population within the rating cohort should also be considered. If a rating cohort is structured such that it contains a very diverse demographic population, it would be appropriate to consider the specific demographic characteristics of the unscored populations. In this instance the unscored members could be given their specific average demographic weight, and then the average disease weight for the program or the health plan could be applied to calculate to the unscored population's risk score.

Model Transparency

To ensure there is transparency in the development of risk scores with the CDPS model, it is necessary for certain information to be shared with all stakeholders. Such data-sharing allows all parties to gain confidence in the calculations performed in risk score development and may identify issues not initially considered thereby improving the quality of the process overall. Information on the model parameters, such as services which cause a claim to be excluded from disease category identification for a member – including how these services are identified – should be shared. MCOs should be provided with sufficient detail, including any applicable programming code when possible, that they can replicate the raw risk scores for each of their members. Note this information is shared in the Medicare and ACA programs.

Member level detail – at least MCO-specific data and potentially blinded-statewide data – should be shared with MCOs. MCO-specific data with disease category information is needed at a minimum for data validation purposes to ensure all data MCOs submitted is being captured by the CDPS model. This detail should include demographic information, aid category, the disease categories flagged for each member and the results for any other flags created through customization. Similarly, prevalence reports can be shared to aid in summarization of risk score development. Any other detail relevant to the development of risk scores should be shared so that the normalized risk scores can be reproduced by MCOs with the data that is provided. The model provided by CMS for ACA Edge server reports could be used as a prototype for such reporting.