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CDPS+Rx v7.1 Update Review

Introduction

The University of California, San Diego (UCSD), developed the risk adjustment models most widely used in the rate setting of managed Medicaid populations. The Chronic Illness and Disability Payment System (CDPS) model utilizes International Classification of Disease (ICD) diagnosis codes to categorize illness into different body systems. Medicaid Rx (MRx) is the pharmacy-based model that uses National Drug Codes (NDCs) to assign categories. The CDPS+Rx risk adjustment model is a combination of both CDPS and MRx that identifies members' risk conditions through a combination of diagnosis codes and NDCs. It is flexible and transparent, giving markets and their actuaries the ability to customize the tool for the specific use of their markets while creating a common baseline for understanding among Managed Care Organizations (MCOs) and State entities UCSD recently updated its models with the release of version 7.1. To help MCOs, states, providers, and other users of the UCSD models, this paper explores the changes from CDPS+Rx version 7.0 to version 7.1 and their impact on risk scores. We acknowledge that CDPS+Rx v7.2 has been released by UCSD; however, Medicaid programs are still adopting versions 7.0 and 7.1. We intend to explore the v7.2 changes and their impacts in a future white paper.

CDPS+Rx Version 7.1 Model Updates

UCSD updates CDPS+Rx annually to reflect changes in ICD-10 codes and NDC. Annual updates to these code sets happens in the fall, and CDPS+Rx v7.1 is updated through October 2023. In addition, UCSD made changes to some of the CDPS categories, including mappings, and national standard weights were updated. These updates impact the risk scores and prevalence of conditions. The following table shows the count of diagnoses and NDCs that have been added, removed, remapped, and total modeled conditions in CDPS+Rx v7.1. ICD-10 Diagnoses were primarily added to the Central Nervous System (CNS), Genital, and Skeletal Diagnostic Category Groups (DCGs) while NDCs were primarily added to Cardiovascular and Psychiatric DCGs.

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Table 1: Condition Mapping Updates

	Diagnoses	NDCs
Added	692	4,474
Removed	20	12
Remapped	118	0
Total v7.1 Modeled	22,732	60,951

The following sections provide additional background information on the CDPS+Rx model, specifically and an illustrative impact of the CDPS+Rx model update on a Wakely benchmark population, focusing on TANF adults using prospective national weights. These results can be materially different from the counts of diagnoses and NDCs added, removed and remapped in the model, and are dependent on the population analyzed.

CDPS+Rx Model Background

The CDPS+Rx risk model combines diagnostic, pharmacy, and demographic data into a calculation of relative member risk. The model maps ICD-10 codes and NDCs to 20 DCGs plus demographic and intercept factors. Within these DCGs, the model categorizes conditions by severity and is hierarchical to ensure that conditions are not double counted; for example, if a member is diagnosed with a condition that is classified as “cardiovascular, very high” and another condition that is “cardiovascular, low”, then the “cardiovascular, low” condition is ignored.

To calculate a member’s raw risk score, conditions, a demographic component, and an intercept are assigned weights which are then added together. Final Medicaid risk scores are generally required to be calculated on a budget-neutral basis. This means that the statewide risk score within a rating cohort is normalized to 1.0 and the total programmatic budget is unchanged after risk adjustment is applied. The weights vary depending on the aid category type and the application method. The CDPS+Rx v7.1 model weights are calculated separately for the Temporary Assistance for Needy Families (TANF) and the Supplemental Security Income (SSI) populations. The TANF population has separate weights for adults and children, while the SSI Population has separate weights for children on certain categories.

In the CDPS+Rx model, there are two application methods: prospective and concurrent. Prospective risk adjustment weights use historical conditions to predict future risk relativities. For example, using 2023 conditions to predict the 2024 claim relativity. Concurrent weights are used to explain risk relativity during the same time period; for example, using 2024 conditions to predict the 2024 claim relativity.

UCSD collaborates with several national MCOs that provide the data used to develop the national weights included with the CDPS+Rx software. Each weight type has four benefit variations included with the models:

- **Acute:** Used to risk adjust members for programs with comprehensive benefit sets.
- **Mental health carveout (MH_CO):** Used to risk adjust members for programs that carve out mental health benefits from the MCO contracts.

- **Pharmacy carveout (Rx_CO):** Used to risk adjust members for programs that carve out the pharmacy benefit from the MCO contracts.
- **Pharmacy and mental health carveout (MHRX_CO):** Used to risk adjust members for programs that carve out both mental health and pharmacy benefits.

Further accuracy may be gained by using customized weights based on State- or program-specific data. This may be particularly useful if a market has specific benefit carve-outs not already included in the national weights, unique utilization patterns, or conditions that justify use of concurrent or prospective rate setting. The use of custom weights requires consideration for population credibility and the time and effort required to maintain and update the weights on a regular basis.

Risk Score Analysis: CDPS+Rx v7.0 versus v7.1

Table 2 provides prevalence rates and condition scores by DCG within the TANF Adult population underlying Wakely’s 2023 benchmark data set for both versions 7.0 and 7.1 using the national acute prospective weights. The columns labeled *Prevalence* are calculated as the proportion of members who have a condition or DCG. The columns labeled *Condition Score* provide the contribution of the DCG to the total risk score. The sum of the *Condition Score* is the raw risk score (excluding intercept and demographics components).

Table 2: Prevalence and Condition Scores –TANF Adult

Diagnostic Category Group (DCG)	TANF Adult v7.0		TANF Adult v7.1		Difference	
	Prevalence	Condition Score	Prevalence	Condition Score	Prevalence	Condition Score
Cardiovascular	18.6%	0.057	18.7%	0.057	0.1%	0.000
Psychiatric	14.6%	0.072	15.1%	0.074	0.4%	0.002
Skeletal	7.0%	0.038	7.0%	0.038	0.0%	0.000
Central Nervous System	3.5%	0.024	3.6%	0.025	0.0%	0.000
Pulmonary	7.3%	0.030	7.3%	0.029	0.0%	-0.001
Gastro	9.3%	0.035	9.3%	0.035	0.0%	0.000
Diabetes	7.7%	0.053	7.7%	0.054	0.0%	0.001
Skin	3.4%	0.011	3.4%	0.011	0.0%	0.000
Renal	2.6%	0.019	3.1%	0.021	0.5%	0.002
Substance Abuse	5.5%	0.026	5.4%	0.030	0.0%	0.003
Cancer	1.2%	0.032	1.2%	0.032	0.0%	0.000
Developmental Delay	0.1%	0.001	0.1%	0.001	0.0%	0.000
Genital	3.4%	0.003	3.5%	0.003	0.1%	0.000
Metabolic	2.6%	0.013	2.3%	0.009	-0.3%	-0.005
Pregnancy	4.6%	0.016	4.7%	0.016	0.0%	0.000
Eye	3.0%	0.010	3.0%	0.010	0.0%	0.000
Cerebrovascular	0.2%	0.001	0.2%	0.001	0.0%	0.000
AIDS / Infection	3.0%	0.055	2.9%	0.054	-0.1%	-0.001
Hematological	1.4%	0.012	1.5%	0.018	0.2%	0.006
Rare Diseases	0.0%	0.001	0.0%	0.001	0.0%	0.000

The following are key considerations for MCOs and other users of the CDPS+Rx model as state and programs update from version 7.0 to 7.1:

- Organizations with a disproportionate number of psychiatric, renal, or hematological conditions may see increased risk scores.
- Organizations with a disproportionate number of metabolic conditions may see reduced risk scores.

These results were generally consistent across TANF Adult, TANF Child and the SSI populations. For this analysis, Wakely included ACA/Expansion members in the TANF Adult population.

Table 2 reflects the combined impact of the updated mappings and revised model weights. In Table 3, Wakely analyzed the impact of the code set update and risk weight changes separately to understand better the drivers of impacts seen in Table 2. In practice, these changes are interrelated as changing the diagnosis or NDC mappings should necessitate a revision to the weights. Table 3 shows the Condition Score impact from first adjusting only the prevalence, then the condition weights, and finally the total change, which is the same results shown in Table 2.

Table 3: Impact Analysis Prevalence vs Weight Update –TANF Adult

Diagnostic Category Group (DCG)	Component Change Analysis		
	Prevalence Update	Weight Update	Total Change
Cardiovascular	0.000	0.000	0.000
Psychiatric	0.002	0.000	0.002
Skeletal	0.000	0.000	0.000
Central Nervous System	0.000	0.000	0.000
Pulmonary	-0.001	0.000	-0.001
Gastro	0.000	0.000	0.000
Diabetes	0.000	0.001	0.001
Skin	0.000	0.000	0.000
Renal	0.005	-0.003	0.002
Substance Abuse	0.000	0.003	0.003
Cancer	0.000	0.000	0.000
Developmental Delay	0.000	0.000	0.000
Genital	0.000	0.000	0.000
Metabolic	-0.002	-0.002	-0.005
Pregnancy	0.000	0.000	0.000
Eye	0.000	0.000	0.000
Cerebrovascular	0.000	0.000	0.000
AIDS / Infection	-0.001	0.000	-0.001
Hematological	0.001	0.004	0.006
Rare Diseases	0.000	0.000	0.000

This shows that some increases to prevalence are offset by lower weights (such as renal conditions) while other increases to prevalence also result in an increased weight (such as hematological conditions).

Conclusion

As we illustrated above, model changes can result in material risk score impacts for MCOs due to changes prevalence rates caused by diagnosis code / NDC changes or condition weights. While these changes will affect all MCOs within a state, the impact of these changes will vary for each MCO because each MCO has a different mix of members with underlying conditions. To manage financial health and succeed in the Medicaid market, MCOs must have strong operations related to risk score management. This includes analytics tailored to risk scores, working with providers to accurately code conditions, and strong quality assurance systems in place when submitting data to state encounter systems.

Wakely can help with a number of analyses related to Medicaid Risk Adjustment including:

- Data Quality and Accuracy Support,
- Prevalence Reports,
- Recapture Analysis and Reports,
- Gap Analysis, and
- Accrual Estimates.

Please contact Andrew Schwarze at andrew.schwarze@wakely.com or Christopher Scott at chris.scott@wakely.com with any questions or to follow up on any of the concepts presented here.

OUR STORY

Five decades. Wakely began in 1969 and eventually evolved into several successful divisions. In 1999, the actuarial arm became the current-day Wakely Consulting Group, LLC, which specializes in providing actuarial expertise in the healthcare industry. Today, there are few healthcare topics our actuaries cannot tackle.

Wakely is now a subsidiary of Health Management Associates. HMA is an independent, national research and consulting firm specializing in publicly funded healthcare and human services policy, programs, financing, and evaluation. We serve government, public and private providers, health systems, health plans, community-based organizations, institutional investors, foundations, and associations. Every client matters. Every client gets our best. With more than 20 offices and over 400 multidisciplinary consultants coast to coast, our expertise, our services, and our team are always within client reach.

Broad healthcare knowledge. Wakely is experienced in all facets of the healthcare industry, from carriers to providers to governmental agencies. Our employees excel at providing solutions to parties across the spectrum.

Your advocate. Our actuarial experts and policy analysts continually monitor and analyze potential changes to inform our clients' strategies – and propel their success.

Our Vision: To partner with clients to drive business growth, accelerate success, and propel the health care industry forward.

Our Mission: We empower our unique team to serve as trusted advisors with a foundation of robust data, advanced analytics, and a comprehensive understanding of the health care industry.

Learn more about Wakely Consulting Group at www.wakely.com