

Model change impact on the Medicare Advantage 2020 RxHCC risk scores

How does the new risk score model affect plan risk scores?

Adrian Clark, FSA, MAAA
David Koenig, FSA, MAAA



CMS has released a revised Part D risk score model for payment year 2020. The plan level impact of this model change will vary based on demographics and other factors, but overall the model change increases low-income risk scores and decreases non-low-income risk scores.

Executive summary

We found several key results from our Medicare Part D model change analysis.

1. The new pharmacy hierarchical condition categories (RxHCC) risk score model for payment year (PY) 2020 generally increases low-income and institutional scores and decreases non-low-income scores compared to the current model.
2. The changes are relatively minor for the populations included in the study.
3. Some HCC coefficients changed significantly from the current model. These changes generally included an increase in low-income coefficients offset by a decrease in non-low-income coefficients.
4. The change in normalization factor will decrease the risk score by 2.3%.
5. More analysis is required to understand how the model change will affect the risk score for any particular plan.

Background

The 2020 Rate Announcement released by the Centers for Medicare and Medicaid Services (CMS) on April 1, 2019, includes details for the 2020 Medicare Part D RxHCC risk score model.

- The model is based on diagnosis data from calendar year (CY) 2014 and expenditure data from CY 2015.
- The model has the same RxHCCs as the current model used for PY 2019.

Although the RxHCCs used to predict future drug cost have not changed in the new model, the amount of weight given to each RxHCC has. These changes will affect each plan differently,

based on the demographic and disease profile of the Medicare beneficiaries enrolled with the plan. It is essential for Part D plan sponsors to understand the impact of these proposed models on their risk scores to accurately forecast the revenue effects of the model change.

This paper summarizes the changes in member risk scores resulting from the risk score model update. The summaries are developed from the new demographic and disease condition category coefficients published by CMS applied to data from the CMS 5% sample database. Using this Medicare population as the basis to assess the model change impact provides further insight into how risk scores will change under the new PY 2020 model.

The Medicare 5% sample database is composed of Medicare fee-for-service (FFS) beneficiaries. While FFS and Medicare Advantage (MA) beneficiaries are similar, they are not the same. The results presented here are based on FFS beneficiaries enrolled in CY 2016 and 2017. We used dual-eligibility as a proxy for low-income eligibility. We created RxHCCs using Risk Adjustment Processing System (RAPS) filtering logic applied to the CY 2016 FFS claims data. In this paper we separately quantify the impact of the change in the normalization factor.

PY 2020 RxHCC risk score model

In this paper we quantify the model change using three separate metrics:

1. The change to the model coefficients.
2. The overall change in risk score for a nationwide population by key enrollee characteristics.
3. The change to the normalization factor.

All changes are reported as the difference between the PY 2020 model and the current PY 2019 model. The model change impact is reported for each of the three metrics in the following sections.

Figures 1 and 2 show that most of the RxHCCs that experienced the greatest coefficient changes had an increase to the low-income coefficients and a decrease to the non-low-income coefficients. Two exceptions to this trend are RxHCCs 395 and 397 for lung and pancreas transplant status, respectively. For these RxHCCs there were significant changes to the non-low-income over age 65 coefficient without any offsetting change in the low-income coefficient.

FIGURE 1: TOP 10 RXHCC COEFFICIENT INCREASES

2019 TO 2020 MODEL						
RXHCC	DESCRIPTION	COMMUNITY				INST
		Low Income		Non-Low Income		
		UNDER 65	65+	UNDER 65	65+	
395	Lung Transplant Status	0.010	0.011	0.048	0.226	0.007
40	Specified Hereditary Metabolic/Immune Disorders	0.114	0.034	0.008	-0.020	0.008
15	Chronic Myeloid Leukemia	0.109	0.089	-0.102	-0.105	0.044
225	Cystic Fibrosis	0.058	0.004	0.003	-0.016	0.009
396	Major Organ Transplant Status, Except Lung, Kidney, and Pancreas	0.010	0.011	0.048	0.025	0.002
1	HIV/AIDS	0.045	0.042	-0.171	-0.125	0.027
160	Multiple Sclerosis	0.045	0.022	-0.105	-0.053	0.010
16	Multiple Myeloma and Other Neoplastic Disorders	0.040	0.036	-0.088	-0.070	0.008
54	Chronic Viral Hepatitis C	0.032	0.032	-0.043	-0.037	0.010
355	Narcolepsy and Cataplexy	0.014	0.007	0.026	0.023	0.002

FIGURE 2: TOP 10 RXHCC COEFFICIENT DECREASES

2019 TO 2020 MODEL						
RXHCC	DESCRIPTION	COMMUNITY				INST
		Low Income		Non-Low Income		
		UNDER 65	65+	UNDER 65	65+	
397	Pancreas Transplant Status	0.002	0.004	-0.005	-0.328	0.002
1	HIV/AIDS	0.045	0.042	-0.171	-0.125	0.027
15	Chronic Myeloid Leukemia	0.109	0.089	-0.102	-0.105	0.044
160	Multiple Sclerosis	0.045	0.022	-0.105	-0.053	0.010
16	Multiple Myeloma and Other Neoplastic Disorders	0.040	0.036	-0.088	-0.070	0.008
261	Dialysis Status	0.011	0.006	-0.048	-0.019	0.002
17	Secondary Cancers of Bone, Lung, Brain, and Other Specified Sites; Liver Cancer	0.017	0.017	-0.031	-0.044	0.005
54	Chronic Viral Hepatitis C	0.032	0.032	-0.043	-0.037	0.010
185	Primary Pulmonary Hypertension	0.019	0.006	-0.022	-0.009	0.004
241	Diabetic Retinopathy	0.001	0.002	-0.020	-0.021	0.000

Figure 3 includes the coefficient changes for the demographic portion of the continuing enrollee risk scores.

FIGURE 3: CHANGE IN DEMOGRAPHIC COEFFICIENTS

2019 TO 2020 MODEL			
DEMOGRAPHIC GROUP	COMMUNITY		
	LOW INCOME	NON-LOW INCOME	INSTITUTIONAL
Female 0-34	0.005	(0.003)	0.018
Female 35-44	0.007	(0.001)	0.022
Female 45-54	0.008	0.002	0.019
Female 55-59	0.007	-	0.017
Female 60-64	0.007	(0.003)	0.017
Female 65-69	0.005	(0.001)	0.016
Female 70-74	0.004	(0.001)	0.015
Female 75-79	0.003	(0.001)	0.012
Female 80-84	0.003	-	0.011
Female 85-89	0.003	0.001	0.010
Female 90-94	0.003	0.003	0.009
Female 95+	0.002	0.004	0.007
Male 0-34	0.006	(0.006)	0.018
Male 35-44	0.007	(0.001)	0.021
Male 45-54	0.007	-	0.018
Male 55-59	0.007	-	0.017
Male 60-64	0.007	(0.003)	0.016
Male 65-69	0.004	(0.002)	0.014
Male 70-74	0.004	(0.002)	0.014
Male 75-79	0.004	(0.001)	0.011
Male 80-84	0.003	0.001	0.011
Male 85-89	0.003	0.001	0.010
Male 90-94	0.002	0.003	0.008
Male 95+	0.003	0.004	0.007
Orig Disabled Female	0.003	0.006	0.001
Orig Disabled Male	0.001	-	0.001

Demographic coefficients generally increased for institutional members and low-income members, as well as for non-low-income members at higher ages. Coefficients generally decreased for non-low income members at lower ages.

All of the coefficient comparisons in Figures 1, 2, and 3 are prior to any changes in the risk score model normalization factor from 2019 to 2020.

OVERALL RISK SCORE CHANGE BY ENROLLEE TYPE

A comparison of just the model coefficients is useful but ultimately insufficient to demonstrate the actual impact of the risk score model update. To measure the actual impact of the model update, it is necessary to score a representative sample of

Using beneficiaries from the Medicare 5% sample database, Figures 4 and 5 show the average risk score change for continuing enrollees (enrollees with 12 months of FFS Medicare enrollment in 2016) and new enrollees (enrolled with Medicare after January 2016). These risk score changes do not include the impact of the change in normalization, which is quantified separately in this paper.

FIGURE 4: CONTINUING ENROLLEES MODEL CHANGE IMPACT

2019 TO 2020 MODEL – CONTINUING ENROLLEES			
COMMUNITY			
GENER	LOW INCOME	NON-LOW INCOME	INSTITUTIONAL
Female	1.1%	-0.6%	1.1%
Male	1.1%	-1.0%	1.1%

FIGURE 5: NEW ENROLLEES MODEL CHANGE IMPACT

2019 TO 2020 MODEL – NEW ENROLLEES			
COMMUNITY			
GENER	LOW INCOME	NON-LOW INCOME	INSTITUTIONAL
Female	1.3%	-0.5%	1.1%
Male	1.1%	-1.0%	1.1%

On average, risk scores increased for low-income and institutional members and decreased for non-low-income members for both continuing and new enrollees. The risk score changes were similar for males and females

beneficiaries under the new model, and compare those scores against scores from the current model. Doing so demonstrates the combined impact of both the RxHCC and the demographic coefficient changes based on the actual disease and demographic makeup of Medicare beneficiaries.

CHANGE TO THE NORMALIZATION FACTOR

The normalization factor changed from 1.019 in the 2019 model to 1.043 in the 2020 model. This change in normalization factor causes risk scores to decrease by 2.3%, all else equal. This impact should be added to the impact reported in the other sections of this paper to calculate the final model impact, because the change in normalization has not been included in those calculations.

Conclusion

Overall, the new PY 2020 RxHCC risk score model leads to higher low-income and institutional scores and lower non-low-income scores.

Several RxHCCs experience a significant coefficient change in the new model, which is often due to a shifting of risk score from non-low-income to low-income. These coefficient changes will affect each plan differently based on the prevalence of these conditions within the plan's population.

The normalization factors for the new risk score model will decrease risk scores by 2.3%, all else equal.

Plans should analyze their historical risk adjustment data under the current PY 2019 and the new PY 2020 risk score model to understand exactly how the PY 2020 risk score model update will impact their risk scores and revenue.



Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com

CONTACT

Adrian Clark
adrian.clark@milliman.com

David Koenig
david.koenig@milliman.com