

70 - Risk Adjustment Models - Overview

(Rev. 114, Issued; 06-07-13, Effective: 06- 07-13, Implementation: 06-07-13)

The CMS-HCC risk adjustment models are used to calculate risk scores, which predict individual beneficiaries' health care expenditures, relative to the average beneficiary. Risk scores are used to adjust payments and bids based on the health status (diagnostic data) and demographic characteristics (such as age and gender) of an enrollee. Both the Medicare Advantage and Prescription Drug programs include risk adjustment as a component of the bidding and payment processes. CMS uses risk adjustment to:

- Standardize bids so that each plan has a bid for the average Medicare beneficiary
- Compare bids based on populations with different health statuses and other characteristics
- Adjust plan payment based on the characteristics of the enrolled population

CMS has developed separate risk adjustment models for the Parts A and B benefits offered by plans under Part C and for the Part D benefits offered by prescription drug plans. Within each benefit, CMS also developed segments of the models for subpopulations with distinct cost patterns.

The Part C model has segments for the following subpopulations of beneficiaries:

- Aged/disabled Community
- Aged/disabled Institutional
- Aged/disabled New enrollee
- ESRD Dialysis
- ESRD Dialysis New Enrollee
- ESRD Transplant
- ESRD Functioning Graft – Community
 - Add-on for 4-9 months
 - Add-on for 10+ months
- ESRD Functioning Graft – Institutional
 - Add-on for 4-9 months
 - Add-on for 10+ months
- ESRD Functioning Graft – New Enrollee
 - Add-on for 4-9 months
 - Add-on for 10+ months

From 2006 through 2010, the Part D model uses a base model with multipliers for:

- Low Income (partial)
- Low Income (full)
- Long Term Institutional (aged)
- Long Term Institutional (disabled)

Starting in 2011, the Part D model has the following segments:

- Aged, non-low income
- Aged, low income
- Disabled, non-low income
- Disabled, low income
- Institutional
- New Enrollee, non-low income
- New Enrollee, low income
- New Enrollee, institutional

Table 2 below summarizes the common characteristics across all HCC-based risk adjustment models.

Table 2. HCC Specific Characteristics

Characteristic	Descriptions
Selected Significant Disease (SSD) Model	Model considers serious manifestations of a condition rather than all levels of severity of a condition. Include most body systems and conditions.
Models are Additive	Individual risk scores are calculated by adding the coefficients associated with each beneficiary's demographic and disease factors.
Prospective Model	Uses diagnostic information from a base year to predict Medicare benefit costs for the following year.
Site Neutral	Models do not distinguish payment based on a site of care.
Diagnostic Sources	Models recognize diagnoses from hospital inpatient, hospital outpatient, and physician settings.
Multiple Chronic Diseases Considered	Risk adjusted payment is based on assignment of diagnoses to disease groups, also known as Condition Categories (CCs). Model is most heavily influenced by Medicare costs associated with chronic disease.
Hierarchies	Condition Categories are placed into hierarchies, reflecting severity and cost dominance. Beneficiaries get credit for the disease with the highest severity or that subsumes the costs of other diseases. Hierarchies allow for payment based on the most serious conditions when less serious conditions also exist.
Disease and Disabled Interactions	Interactions allow for higher risk scores for certain conditions when the presence of another disease or demographic status, e.g., disabled status, is indicative of higher costs. Disease interactions are additive factors and

	increase payment accuracy.
Demographic Variables	Models include five demographic factors: age, sex, disabled status, original reason for entitlement, Medicaid or low income status. These factors are typically measured as of the data collection period.