



E-BRIEF SERIES



# Don't Muddle Your Models:

## A Compare & Contrast of HCC Risk Models

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## Whether auditing or coding, it's imperative to know your model when beginning a new or unfamiliar HCC project in Risk Adjustment (RA).

Being prepared for yearly updates to codes, groupings, and model changes and applying those changes to the correct dates of services is a vital responsibility of those working within the RA field. Differentiating the unique components between models will allow you to put your best foot forward and leave no stone unturned when it comes time for quality review audits.

Although there are many RA models, there are three core HCC programs that CMS has developed: CMS-HCC, HHS-HCC, and RxHCC. The CMS-HCC model for CY 2021 consists of the Medicare HCC model category V24/V22 (Part C) along with special population models for ESRD (category V21) and Programs of All-Inclusive Care for the Elderly (PACE) (category V22). The RxHCC prescription-based model V05 is utilized for Medicare Part D benefits. The HHS-HCC model which operates by a separate ICD-10 to HHS-Condition Categories Crosswalk and Hierarchies tables, is divided into models by age: adult (21 and older), child (2-20), and infant (up to age 1).

Each model captures data characteristic of the population's risk — based on disease burden and demographics — to predict healthcare expenditures. For all models within the scope of CMS-HCC and HHS-HCC, all conditions must be documented with MEAT (Monitoring, Evaluating, Assessing/Addressing, or Treating) or TAMPER (Treatment, Assessment, Monitor or Medicate, Plan, Evaluate, or Referral) and reported annually, from qualifying face-to-face encounters, with an acceptable provider type. When CMS Calculates the Risk Adjustment Factor (RAF) score, both include characteristics of age and sex demographics along with disease interactions. Before we break down differences between the models, let's take a look at the 2020 model changes and what this means in relation to the models stated above.



# Program Changes

Beginning in 2019, CMS began implementing the 2020 CMS-HCC model, which transitions calculations from CMS' Risk Adjustment Processing System (RAPS) to encounter data to be phased in by 2022 and successive years. When determining which is used for calculations during the payment year, version 24 relates to the 2020 CMS-HCC model, version 23 is the 2019 CMS-HCC model, and version 22 correlates to the 2017 CMS-HCC model.

## Calculations for CY 2021:

- Medicare HCC: 75% of the 2020 CMS-HCC model (V24) with encounter data, RAPS inpatient records and FFS summed with 25% of the 2017 CMS-HCC model (V22) using encounter data, RAPS inpatient records and FFS.
- PACE: 2017 CMS-HCC model (V22) and associated frailty factors for non-ESRD aged/disabled participants. PACE ESRD status participant calculation will continue to use 2019 ESRD dialysis and ESRD functioning graft models.
- ESRD: 75% of the 2020 ESRD models summed with 25% of the 2019 ESRD models.
- RxHCC: 75% of the 2020 RxHCC model with encounter data, RAPS inpatient records, and FFS claims summed with 25% applying diagnoses from RAPS and FFS.



**Invoice**

Item	Qty	Units	Amount	Service	Unit Price	Price
T	33	pkcs		Direct pharmacology for summer menus, menus design and printing on glossy waterproof 100 gsm	273.11 €	273.11 €
T	1	pkcs		Single product photo on white background	2.52 €	83.75 €
T	1	pkcs		Photo License for Certificates	16.80 €	20.00 €
<b>Total</b>						273.11 €
<b>VAT 10%</b>						27.31 €
<b>Total Amount payable</b>						300.42 €

## Variations in Model Versions

<b>CMS-HCC</b>	<b>HHS-HCC</b>
Pays Medicare Advantage plans (Medicare HMOs)	ACA marketplace managed care plans
Calculations also include institutional status	Calculations also include financial status
Primarily chronic conditions	Chronic and acute conditions
Medicare patients aged and/or disabled (65+)	All ages (models for infant, child, and adults)
Prospective: Diagnoses and demographics from the current year/base year are submitted for payment for the next year	Concurrent: Diagnoses and demographics from current year are submitted for payment for the same year
Drug cost not covered	Drug cost are covered
Medicare provider payments	Commercial, individual, and small group insurance payments
Submission is done through the Risk Adjustment Processing System (RAPS) and the Encounter Data System (EDS)	Submissions of enrollee demographics, claims, and encounter diagnosis-level data via an External Data Gathering Environment (EDGE) server

## CMS-HCC

- Increased capture of categories correlates to larger RAF scores demonstrating an increased intensity of healthcare costs.
- Hierarchies among condition categories: If a documented condition is outranked within hierarchies list, the condition holding the highest severity of illness is captured. Diagnoses from separate categories on the hierarchies list are added to the patient total RAF score.
- Should multiple conditions be documented that fall within the same category, the category is captured only once per base year.
- New enrollees can become eligible for Medicare if they are under age 65 by disability or ESRD status.
- Normalization Factors: 2020 CMS-HCC Model of 1.097 and 2017 CMS-HCC Model of 1.106.
- Coding intensity adjustment: 5.90% which is applied for intensity of coding between contracts. Coding pattern differences do not represent coding accuracy, but differences in coding patterns between MA and FFS.

## HHS-HCC

- Relative risk of beneficiaries determines the plans risk score.
- A transfer formula is used to average the individual risk scores of the plan, adjust, and then calculate the funds to then transfer from low- to high-risk plans.
- Variables for the adult and child model include age/sex demographic categories and diagnosis groups as well as disease interactions for the adult model.
- Infants are assigned a birth maturity (age 0 infants) or Age 1 category (age 1 infants), and a disease severity category. The single highest disease severity level is assigned; or if there are no severity HCCs, then the lowest level is assigned. There are two additive terms for age/sex demographics.
  - Birth maturity categories: extremely immature, immature; premature multiples, term, and the single Age 1 Maturity category
  - Disease Severity categories (based on clinical severity and associated costs): Level 5 highest severity – Level 1 lowest severity
- Metal levels represent the standard benefit (deductible, coinsurance rate, and out-of-pocket maximum). Metal levels classify patients as either Platinum, Gold, Silver, Bronze, or Catastrophic which plans are also adjusted by.

## ESRD

- ESRD model does not vary much from the Medicare HCC model.
- Takes the CMS-HCC model with different coefficients to account for higher expenses seen within the population, accounting for approximately 1 percent of Medicare enrollees.
- Starting January 1, 2021, all Medicare-eligible individuals with ESRD can enroll in MA plans. Prior to the 21st Century Cures Act, dialysis status individuals were not eligible to join unless qualifying under specific situations or if already enrolled when the ESRD was diagnosed.
- Normalization Factors: CMS-HCC 2019 ESRD dialysis model and 2020 ESRD dialysis model of 1.079. CMS-HCC 2019 ESRD functioning graft model and 2020 ESRD functioning graft model of 1.118.
- Patients with ESRD on dialysis, having transplants, and/or in post-graft status are separated into different ESRD models grouping beneficiaries by treatment for each month of the payment year by dialysis, transplant (3 month), and functioning graft (from 4 months post-graft) populations.
  - Regression-based models: Dialysis and functioning graft models
  - Kidney Transplant Factors: Developed from average costs of transplant stays and post-graft months 2-3
  - Three functioning graft model segments: Community continuing enrollee, institutional continuing enrollee, and new enrollee used to predict cost for enrollees with a functioning graft and is 4+ months post-kidney transplant
  - Four post-graft factors: Captures differing additional predicted post-transplant costs based on time pasted

## PACE

- Payment methodology is unlike the CMS-HCC model or ESRD.
- Bids are not submitted by PACE organizations.
- Utilizes a frailty adjustment unique to the model to adjust for the population's functional status. This is determined by performing activities of daily living (ADLs) including bathing, dressing, eating, getting in or out of chairs, walking, and using the toilet — using a scale of difficulties 5-6, 3-4, 1-2, and no difficulties.
- ADL data are counted from the Consumer Assessment of Health Plans Survey (CAHPS).
- Adjustments are applied to those enrolled in PACE organizations or qualifying FIDE SNPs, aged and/or disabled community beneficiaries ages 55 and older.
- Adjustments are made proportionally by beneficiaries in each ADL count category through the Health Outcomes Survey (HOS).
  - Adjusted at contract level for PACE
  - Adjusted at Plan Benefit Package level for FIDE SNPs
- MA organizations are not responsible for kidney transplant organ acquisition costs any longer. However, PACE organizations continue to hold responsibility for covering the costs of acquisition.

## RxHCC

- Developed in 2006 to cover Part D benefits not covered under the CMS-HCC model, whereas prescription benefits are included in the HHS-CMS model.
- Operates in a similar manner as the CMS-HCC model as a prospective program.
- Normalization Factor: 2020 RxHCC model of 1.063.
- Almost all HCC diagnoses map to an RxHCC, but the same cannot be said in reverse as not all RxHCC will map to an HCC.
- Examples:
  - F31.9 Bipolar disorder, unspecified maps for both models
  - E11.9 Type 2 diabetes mellitus without complications maps for both models
  - I20.9 Angina pectoris, unspecified maps for both models
  - E03.9 Hypothyroidism, unspecified maps for RxHCC, but not CMS-HCC
  - E78.5 Hyperlipidemia, unspecified maps for RxHCC, but not CMS-HCC
  - F41.1 Generalized anxiety disorder maps for RxHCC, but not CMS-HCC
  - I10 Essential (primary) hypertension maps for RxHCC, but not CMS-HCC
- Deductibles and copayments are excluded from coverage



## Sources

<https://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance>

<https://www.cms.gov/files/document/2021-advance-notice-part-ii.pdf>

[https://www.cms.gov/mmrr/Downloads/MMRR2014\\_004\\_03\\_a03.pdf](https://www.cms.gov/mmrr/Downloads/MMRR2014_004_03_a03.pdf)

<https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/RA-March-31-White-Paper-032416.pdf>

<https://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/Downloads/Potential-Updates-to-HHS-HCCs-HHS-operated-Risk-Adjustment-Program.pdf>

<https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/RTC-Dec2018.pdf>

<https://www.cms.gov/files/document/2021-announcement.pdf>

[https://www.cms.gov/mmrr/Downloads/MMRR2014\\_004\\_03\\_a04.pdf](https://www.cms.gov/mmrr/Downloads/MMRR2014_004_03_a04.pdf)

<http://www.hfni.com/assets/forms/Evaluation%20of%20the%20CMS-HCC%20Risk%20Adjustment%20Model.pdf>





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**AUTHOR BIO**

Laura Brink, RHIT, CRC began her career as an outpatient medical coder and auditor. Following her work in outpatient services, she moved to specializing in HCC Risk Adjustment performing provider and coder auditing with experience working in multiple models such as HCC, RxHCC, ACO, and QHP. Additionally, she assisted in provider education and training to ensure accurate risk scores utilizing query processes.

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