Optum

# Risk Adjustment Coding and HCC Guide

Simplifying the RA/HCC systems and optimization opportunities



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# Contents

# Introduction

The traditional fee-for-service payment model has been widely used since the 1930s when health insurance plans initially gained popularity within the United States. In this payment model, a provider or facility is compensated based on the services provided. This payment model has proven to be very expensive. Closer attention is being paid to healthcare spending versus outcomes and quality of care and this has been compared to the healthcare spending of other nations. This has caused a need to develop a system to evaluate the care being given.

In the 1970s, Medicare began demonstration projects that contracted with health maintenance organizations (HMO) to provide care for Medicare beneficiaries in exchange for prospective payments. In 1985, this project changed from demonstration status to a regular part of the Medicare program, Medicare Part C. The Balanced Budget Act (BBA) of 1997 named Medicare's Part C managed care program Medicare+Choice, and the Medicare Prescription Drug, Improvement and Modernization Act (MMA) of 2003 again renamed it to Medicare Advantage (MA).

Medicare is one of the world's largest health insurance programs, and about one-third of the beneficiaries on Medicare are enrolled in an MA private healthcare plan. Due to the great variance in the health status of Medicare beneficiaries, risk adjustment provides a means of adequately compensating those plans with large numbers of seriously ill patients while not overburdening other plans that have healthier individuals. MA plans have been using the Hierarchical Condition Category (HCC) risk-adjustment model since 2004.

The primary purpose of a risk-adjustment model is to predict (on average) the future healthcare costs for specific consortiums enrolled in MA health plans. The Centers for Medicare and Medicaid Services (CMS) is then able to provide capitation payments to these private health plans. Capitation payments are an incentive for health plans to enroll not only healthier individuals but those with chronic conditions or who are more seriously ill by removing some of the financial burden.

The MA risk-adjustment model uses HCCs to assess the disease burden of its enrollees. HCC diagnostic groupings were created after examining claims data so that enrollees with similar disease processes, and consequently similar healthcare expenditures, could be pooled into a larger data set in which an average expenditure rate could be determined. The medical conditions included in HCC categories are those that were determined to most predictably affect the health status and healthcare costs of any individual.

Section 1343 of the Affordable Care Act (ACA) of 2010 provides for a risk-adjustment program for non-Medicare Advantage plans that are available in online insurance exchange marketplaces. Beginning in 2014, commercial insurances were able to potentially mitigate increased costs for the insurance plan and increased premiums for higher-risk populations, such as those with chronic illnesses, by using a risk-adjustment model. The risk-adjustment program developed for use by non-Medicare plans is maintained by the Department of Health and Human Services (HHS). This model also uses HCC diagnostic groupings; however, this set of HCCs differs from the CMS-HCCs to reflect the differences in the populations served by each healthcare plan type.

This publication will cover the following:

- History and purpose of risk-adjustment factor (RAF)
- Key terms definitions
- Acceptable provider types
- Payment methodology and timeline
- Coding and documentation
- Tools for risk adjustment
- Coding scenarios
- Guidance for developing internal risk adjustment coding polices
- Audits
- Healthcare Effectiveness Data and Information Set (HEDIS)
- Risk adjustment model tables

Coding is an increasingly complex business. The movement from the fee-for-service payment model to more qualitative models has increased rapidly since 2004. The demand for quality-focused payment models has gained more attention since the ACA introduced a risk-adjustment model to the online insurance exchange marketplace plans in 2017. Coding staff must have knowledge of risk- adjustment practices in this rapidly changing environment. This book provides conceptual and practical knowledge of risk adjustment to coders, coding managers, medical staff, clinical documentation improvement (CDI) professionals, payers, educators, and students. The goal is to develop and enrich the knowledge of the user's understanding of this payment methodology.

# Chapter 1. Risk Adjustment Basics

The need to track and report disease and causes of death was recognized in the 18th century. The various popular methodologies were compiled over the course of the First through Fifth International Statistical Institute Conferences in the 20th century; during the Sixth International Conference, the World Health Organization (WHO) was tasked with revising and maintaining the classifications of disease and death. In the 1930s health insurance coverage gained popularity. Many labor groups and companies started offering this type of benefit to their employees. In 1966, the American Medical Association (AMA) published the first edition of the Current Procedural Terminology (CPT®) to standardize the reporting of surgical procedures. This framework created the fee-for-service payment model, which is currently used.

The fee-for-service model, however, does not account for acuity or morbidity of its patients. A medically complex, chronically ill patient's healthcare provider would receive the same reimbursement for the same procedure done on a healthy patient.

In 1997, the Balanced Budget Act mandated that Medicare begin allowing participants to choose between traditional Medicare and managed Medicare plans (now Medicare Advantage), which would incorporate the risk-adjustment payment methodology no later than January 2000. Initially, these managed Medicare plans were paid a fixed dollar amount to care for Medicare members. In 2007, these MA plans were based 100 percent on risk adjustment. This better allocates resources to populations of medically needy patients.

## Key Terms

**Hierarchical condition categories (HCC).** Groupings of clinically similar diagnoses in each risk-adjustment model. Conditions are categorized hierarchically and the highest severity takes precedence over other conditions in a hierarchy. Each HCC is assigned a relative factor that is used to produce risk scores for Medicare beneficiaries, based on the data submitted in the data collection period.

**Medicare Advantage (MA) plan.** Sometimes called "Part C" or "MA plans," offered by private companies approved by Medicare. If a Medicare Advantage plan is selected by the enrollee, the plan will provide all of Part A (hospital insurance) and Part B (medical insurance) coverage. Medicare Advantage plans may offer extra coverage, such as vision, hearing, dental, and/or health and wellness programs. Most include Medicare prescription drug coverage (Part D).

**Risk-adjustment factor (RAF).** Risk score assigned to each beneficiary based on his or her disease burden, as well as demographic factors.

**Sweeps.** Submission deadline for risk adjustment data that occurs three times annually: January, March, and September. Generally, claims continue to be accepted for two weeks after the deadline.

## Payment Methodology

### Purpose of Risk Adjustment

Risk adjustment allows CMS to pay plans for the risk of the beneficiaries they enroll, instead of an average amount for Medicare beneficiaries. By risk adjusting plan payments, CMS is able to make appropriate and accurate payments for enrollees with differences in expected costs. Risk adjustment is used to adjust bidding and payment based on the health status and demographic characteristics of an enrollee. Risk scores measure individual beneficiaries' relative risk and risk scores are used to adjust payments for each beneficiary's expected expenditures. By risk adjusting plan bids, CMS is able to use standardized bids as base payments to plans.

The primary purpose of a risk-adjustment model is to predict future healthcare costs for specific consortiums enrolled in MA health plans based on current risk factors associated with the covered patient population. CMS is then able to provide capitation payments to these private health plans. Capitation payments that are calculated based on an entire risk pool incentivize health plans to enroll not only healthier individuals but those with chronic conditions or who are more seriously ill by removing some of the financial burden.

The MA risk-adjustment model uses HCCs to assess the disease burden of its enrollees. The HCC diagnostic groupings were created after examining claims data so that enrollees with similar disease processes, and consequently similar healthcare expenditures, could be pooled into a larger data set in which an average expenditure rate could be determined. The medical conditions included in HCC categories are those that were determined to most predictably affect the health status and healthcare costs of any individual.

Hierarchical condition categories (HCC) were first used in 2004 to set capitated payments for private health plans caring for Medicare beneficiaries. The term "risk adjustment" is often used to describe what HCCs do. HCCs predict healthcare resource consumption of individuals. HCC scores are used to "risk adjust" payments to a health plan based on the level of risk the beneficiary presents to the plan. HCCs adjust payments so that there is a higher reimbursement for sicker patients.

The HCC system was developed to improve upon an earlier capitation method that used demographics and inpatient diagnoses to set payments. A major shortcoming of this earlier methodology was that only inpatient diagnoses were used, allowing only patients with an inpatient admission to generate any additional payment to the health plan. Plans that were able to provide adequate ambulatory care received lower payments. Federal law in 2000 required the use of ambulatory diagnoses and specified that the new risk adjustment be phased in beginning in 2004.

## Coding Scenario 4—CMS-HCC Model

**Patient:** Joe Holmes **DOS:** 01/23/2023 **Ins:** Medicare

**DR:** Robert Jacobs, M.D. **Age:** 78 years

### CC:

Annual wellness visit

### Subjective

Patient seen for annual wellness visit. He had a colonoscopy in 2018. He refuses the flu vaccine. Patient is compliant with DM management. Patient complains of wound on his leg for 10 days. Med list reviewed in EMR module. No changes to P/F/S hx from last AWV. Patient regularly sees oncology. Today wants to discuss other treatment options. PHQ-9 score is 4. Upset about mets.

### Objective

Alert, no acute distress, HEENT:NC, pupils equal, round, sclera white, conj. clear, external nose WNL, on $O_2$ nasal cannula, no lesions, external ear normal, lips/mouth free of lesions, Neuro: no tremor, Neck: trachea midline normal appearance, MS: normal gait and posture, Ext: no edema or clubbing, poss claudication, ulcer noted on distal left calf r/o venous stasis, skin: No rash or lesions, L diminished bs, no wheezing, Hrrr no m/r/c, Abd soft nt +bs.

### Assessment

Poss claudication/leg ulcer, bone and lymph mets, prostate ca, DM, IBS, resp insuff syndrome.

### Plan

Get ABI—r/o claudication w/ ulcer. DAL patient needs to speak to oncologist about tx for mets and continue "watchful waiting" on prostate ca. Patient is compliant on DM regime, continue. Refer to GI for IBS. Dependent on home $O_2$ increase 5L.

| HCC Category | ICD-10-CM Code | Description | RAF Value | Validated by Current Documentation | Improved Documentation |
|---|---|---|---|---|---|
| HCC 23 | C61 | Malignant neoplasm of prostate | | Yes | Yes |
| HCC 18 | C79.51 | Secondary malignant neoplasm of bone | 0.318 | Yes | Yes |
| HCC 18 | C77.9 | Secondary and unspecified malignant neoplasm of lymph node, unspecified | 0.318 | Yes | Yes |
| HCC 37 | E11.51 | Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene | 0.166 | No | Yes |
| HCC 155 | F32.1 | Major depressive disorder, single episode, moderate | 0.299 | No | Yes |
| HCC 213 | J96.11 | Chronic respiratory failure with hypoxia | 0.370 | No | Yes |
| Demographics | 78-year-old, male, not Medicaid eligible | | 0.502 | Yes | Yes |
| D4 | 4 Payment HCCs | | 0.000 | No | Yes |
| Total RAF | | | | 1.190 | 1.655 |

* Trumping logic applies

The provider should be queried for major depressive disorder based on the PHQ-9 score of 4, scores in the range of 0-4 indicate minimal or no depression.

The provider should also be queried for chronic respiratory failure and underlying condition. The patient is noted to be dependent on oxygen and the oxygen is being increased. The documentation of "resp insuff syndrome" cannot be indexed in ICD-10-CM, and respiratory insufficiency is a symptom, reported with code R06.89 Other abnormalities of breathing.

Claudication would be coded to I73.9 Peripheral vascular disease, unspecified, but is currently documented with uncertainty. The provider should be queried for validation of this condition if it exists. Until the peripheral vascular disease is documented as a valid condition, reporting E11.51 is not appropriate. *AHA Coding Clinic,* second quarter, 2018, page 7 states the following, "Peripheral arteriosclerosis, peripheral vascular disease and peripheral arterial disease in a diabetic patient should be linked and coded as 'diabetic peripheral angiopathy.'" However, this link cannot be made when the documentation indicates uncertainty as to the peripheral vascular disease.

The CMS-HCC trumping logic applies to HCC 18. Conditions in HCC 18 trump conditions in HCC 23. Therefore, in this example, any HCC 23 category represented would not be factored into the patient's risk score.



 

# Chapter 3. Audits and Quality Improvement

A chart audit is a detailed review of the medical record to determine if the services rendered match the services reported. In risk adjustment, this is ensuring that conditions reported are supported by valid medical records. Most often, audits are performed to ensure accuracy and compliance; however, quality improvement measure audits are increasingly popular.

It is advisable to regularly audit the documentation being used as well as the coding for risk adjustment to ensure compliance.

### Step 1

Determine who will perform the audit. An internal audit is typically performed by coding staff within the practice that are proficient in coding and interpreting payer guidelines. Depending upon the size of the practice and the number of services provided annually, a compliance department with full-time auditors may be established. If not, the person performing the audit should not audit claims that he or she coded.

### Step 2

Define the scope of the audit. Determine what types of services to include in the review. Use the most recent Office of Inspector General (OIG) Work Plan, recovery audit contractor (RAC) issues, and third-party payer provider bulletins, which will help identify areas that can be targeted for upcoming audits. Review the OIG Work Plan, which is now a web-based work plan updated monthly rather than yearly, to determine if there are issues of concern that apply to the practice. Determine specific coding issues or claim denials that are experienced by the practice. The frequency of coding or claims issues and potential effect on reimbursement or potential risk can help prioritize which areas should be reviewed. Services that are frequently performed or have complex coding and billing issues should also be reviewed, as the potential for mistakes or impact to revenue could be substantial.

### Step 3

Determine the type of audit to be performed and the areas to be reviewed. Once the area of review is identified, careful consideration should be given to the type of audit performed. Reviews can be prospective or retrospective. If a service is new to the practice, or if coding and billing guidelines have recently been revised, it may be advisable to create a policy stating that a prospective review is performed on a specified number of claims as part of a compliance plan. The audit should include ensuring the medical record coded meets administrative requirements, such as patient name and date of service are on the record, accuracy of diagnosis codes, compliance of any queries generated, and whether the source document supports code assignment.

### Step 4

Assemble reference materials. Reference materials, such as current editions of coding manuals and Centers for Medicare and Medicaid Services (CMS) or other third-party policies pertinent to the services being reviewed, should be collected.

### Step 5

Develop customized data capture tools. Use an audit worksheet, see example on page 63. Audit worksheets can aid in the audit process. They help verify that signatures were obtained and that patient identifying information (e.g., complete name, date of birth) is correct.

### Step 6

Develop a reporting mechanism for findings. Once the audit is complete, written recommendations should be made. The recommendations can include conducting a more frequent focused audit, implementing improved documentation templates, or conducting targeted education on ICD-10-CM coding. Each practice should have benchmarks set up that all providers must meet. For example, if 10 charts are reviewed, 90 percent must be correct. It is also important to identify claims that may need to be corrected or payments that need to be refunded to the payer.

### Step 7

Determine recommendations and corrective actions. The next step is to schedule meetings with the providers to provide feedback, recommendations, and education. Typically it works best to meet with a provider on an individual basis and have his or her audit results and charts available as examples so that they can be reviewed and discussed. The provider should be given the opportunity to explain the rationale behind his or her coding, and perhaps even provide additional information to help the coder further understand a particular clinical term. Allowing the provider to give feedback also helps build a better auditor-provider relationship. This relationship may make the provider feel comfortable enough with the auditor to ask questions about future coding issues, instead of reporting incorrect codes to payers. A word to the wise, when discussing a coding error with a provider, it is a good idea to have a copy of the official source document supporting discussion of the error.

### Step 8

Implement quality improvement initiatives. After addressing the identified issues, set up a process to monitor these areas. Formal training programs, one-on-one coaching, and regularly scheduled audits can be beneficial. After an audit process is in place, it may be necessary to update practice policies and procedures that need to be monitored on a regular basis. Lastly, designate an individual who is responsible for each area of compliance and document the follow-through so that providers stay on the right track with billing practices.

# Chapter 4.
# CY2025 CMS-HCC Model Category V28

## Disease Coefficient Relative Factors and Hierarchies for Continuing Enrollees Community and Institutional Beneficiaries with Midyear Final ICD-10-CM Mappings

According to the Announcement of Calendar Year (CY) 2024 Medicare Advantage (MA) Capitation Rates and Part C and Part D Payment Policies published on March 31, 2023, CMS has finalized the updated risk adjustment model and will phase it in over 3 years. Risk scores will be calculated as a blend of 67 percent of the risk scores calculated with the current model (the 2020 model) and 33 percent of the risk scores calculated with the updated model (the 2024 model).

| ICD-10-CM Code | ICD-10-CM Code Description | V28 CMS-HCC | V28 CMS-HCC Disease Group | V28 CMS-HCC Hierarchies | Community, NonDual, Aged | Community, NonDual, Disabled | Community, FBDual, Aged | Community, FBDual, Disabled | Community, PBDual, Aged | Community, PBDual, Disabled | Institutional |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A01.04 | Typhoid arthritis | 92 | Bone/Joint/Muscle/Severe Soft Tissue Infections/Necrosis | | 0.479 | 0.529 | 0.611 | 0.632 | 0.471 | 0.539 | 0.556 |
| A01.05 | Typhoid osteomyelitis | 92 | Bone/Joint/Muscle/Severe Soft Tissue Infections/Necrosis | | 0.479 | 0.529 | 0.611 | 0.632 | 0.471 | 0.539 | 0.556 |
| A02.1 | Salmonella sepsis | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A02.23 | Salmonella arthritis | 92 | Bone/Joint/Muscle/Severe Soft Tissue Infections/Necrosis | | 0.479 | 0.529 | 0.611 | 0.632 | 0.471 | 0.539 | 0.556 |
| A02.24 | Salmonella osteomyelitis | 92 | Bone/Joint/Muscle/Severe Soft Tissue Infections/Necrosis | | 0.479 | 0.529 | 0.611 | 0.632 | 0.471 | 0.539 | 0.556 |
| A06.5 | Amebic lung abscess | 283 | Empyema, Lung Abscess | | 0.204 | 0 | 0.131 | 0.074 | 0 | 0 | 0 |
| A07.2 | Cryptosporidiosis | 6 | Opportunistic Infections | | 0.435 | 0.704 | 0.548 | 0.919 | 0.482 | 0.765 | 0.58 |
| A20.7 | Septicemic plague | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A22.7 | Anthrax sepsis | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A26.7 | Erysipelothrix sepsis | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A31.0 | Pulmonary mycobacterial infection | 6 | Opportunistic Infections | | 0.435 | 0.704 | 0.548 | 0.919 | 0.482 | 0.765 | 0.58 |
| A31.2 | Disseminated mycobacterium avium-intracellulare complex (DMAC) | 6 | Opportunistic Infections | | 0.435 | 0.704 | 0.548 | 0.919 | 0.482 | 0.765 | 0.58 |
| A32.7 | Listerial sepsis | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A36.81 | Diphtheritic cardiomyopathy | 227 | Cardiomyopathy/Myocarditis | | 0.189 | 0.2 | 0.173 | 0.198 | 0.145 | 0.186 | 0.189 |
| A39.2 | Acute meningococcemia | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A39.3 | Chronic meningococcemia | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A39.4 | Meningococcemia, unspecified | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A39.83 | Meningococcal arthritis | 92 | Bone/Joint/Muscle/Severe Soft Tissue Infections/Necrosis | | 0.479 | 0.529 | 0.611 | 0.632 | 0.471 | 0.539 | 0.556 |
| A39.84 | Postmeningococcal arthritis | 92 | Bone/Joint/Muscle/Severe Soft Tissue Infections/Necrosis | | 0.479 | 0.529 | 0.611 | 0.632 | 0.471 | 0.539 | 0.556 |
| A40.0 | Sepsis due to streptococcus, group A | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |
| A40.1 | Sepsis due to streptococcus, group B | 2 | Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/ Shock | | 0.455 | 0.532 | 0.596 | 0.811 | 0.409 | 0.417 | 0.346 |

# Chapter 5.
# CY2025 CMS RxHCC Model Category V08

| ICD-10-CM Code | ICD-10-CM Code Description | V08 RxHCC | V08 RX HCC Description | V08 RxHCC Hierarchy | Community Non-Low Income, Age>=65 | Community Non-Low Income, Age<65 | Community Low Income, Age>=65 | Community Low Income, Age<65 | Institutional |
|---|---|---|---|---|---|---|---|---|---|
| A07.2 | Cryptosporidiosis | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| A31.0 | Pulmonary mycobacterial infection | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| A31.2 | Disseminated mycobacterium avium-intracellulare complex (DMAC) | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| A36.81 | Diphtheritic cardiomyopathy | 186 | Heart Failure | 187 | 0.210 | 0.148 | 0.270 | 0.195 | 0.234 |
| A39.1 | Waterhouse-Friderichsen syndrome | 43 | Pituitary, Adrenal Gland, and Other Endocrine and Metabolic Disorders | | 0.062 | 0.165 | 0.000 | 0.141 | 0.068 |
| A81.00 | Creutzfeldt-Jakob disease, unspecified | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.01 | Variant Creutzfeldt-Jakob disease | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.09 | Other Creutzfeldt-Jakob disease | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.1 | Subacute sclerosing panencephalitis | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.2 | Progressive multifocal leukoencephalopathy | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.81 | Kuru | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.82 | Gerstmann-Straussler-Scheinker syndrome | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.83 | Fatal familial insomnia | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.89 | Other atypical virus infections of central nervous system | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| A81.9 | Atypical virus infection of central nervous system, unspecified | 112 | Dementia, Except Alzheimer's Disease | | 0.096 | 0.038 | 0.000 | 0.000 | 0.000 |
| B00.82 | Herpes simplex myelitis | 155 | Spinal Cord Disorders | | 0.094 | 0.080 | 0.053 | 0.000 | 0.018 |
| B01.12 | Varicella myelitis | 155 | Spinal Cord Disorders | | 0.094 | 0.080 | 0.053 | 0.000 | 0.018 |
| B02.21 | Postherpetic geniculate ganglionitis | 168 | Trigeminal and Postherpetic Neuralgia | | 0.124 | 0.257 | 0.201 | 0.245 | 0.207 |
| B02.22 | Postherpetic trigeminal neuralgia | 168 | Trigeminal and Postherpetic Neuralgia | | 0.124 | 0.257 | 0.201 | 0.245 | 0.207 |
| B02.23 | Postherpetic polyneuropathy | 168 | Trigeminal and Postherpetic Neuralgia | | 0.124 | 0.257 | 0.201 | 0.245 | 0.207 |
| B02.24 | Postherpetic myelitis | 155 | Spinal Cord Disorders | | 0.094 | 0.080 | 0.053 | 0.000 | 0.018 |
| B02.29 | Other postherpetic nervous system involvement | 168 | Trigeminal and Postherpetic Neuralgia | | 0.124 | 0.257 | 0.201 | 0.245 | 0.207 |
| B17.10 | Acute hepatitis C without hepatic coma | 55 | Acute or Unspecified Viral Hepatitis C | | 0.317 | 0.363 | 0.453 | 0.359 | 0.434 |
| B17.11 | Acute hepatitis C with hepatic coma | 55 | Acute or Unspecified Viral Hepatitis C | | 0.317 | 0.363 | 0.453 | 0.359 | 0.434 |
| B18.0 | Chronic viral hepatitis B with delta-agent | 56 | Chronic Viral Hepatitis B and OtherSpecified Chronic Viral Hepatitis | | 0.307 | 0.443 | 0.748 | 0.446 | 0.170 |
| B18.1 | Chronic viral hepatitis B without delta-agent | 56 | Chronic Viral Hepatitis B and OtherSpecified Chronic Viral Hepatitis | | 0.307 | 0.443 | 0.748 | 0.446 | 0.170 |
| B18.2 | Chronic viral hepatitis C | 54 | Chronic Viral Hepatitis C | 55 | 0.317 | 0.363 | 0.453 | 0.359 | 0.434 |
| B18.8 | Other chronic viral hepatitis | 56 | Chronic Viral Hepatitis B and OtherSpecified Chronic Viral Hepatitis | | 0.307 | 0.443 | 0.748 | 0.446 | 0.170 |
| B19.20 | Unspecified viral hepatitis C without hepatic coma | 55 | Acute or Unspecified Viral Hepatitis C | | 0.317 | 0.363 | 0.453 | 0.359 | 0.434 |
| B19.21 | Unspecified viral hepatitis C with hepatic coma | 55 | Acute or Unspecified Viral Hepatitis C | | 0.317 | 0.363 | 0.453 | 0.359 | 0.434 |
| B20 | Human immunodeficiency virus [HIV] disease | 1 | HIV/AIDS | | 4.759 | 5.738 | 4.549 | 4.793 | 2.773 |
| B25.0 | Cytomegaloviral pneumonitis | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| B25.1 | Cytomegaloviral hepatitis | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| B25.2 | Cytomegaloviral pancreatitis | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| B25.8 | Other cytomegaloviral diseases | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| B25.9 | Cytomegaloviral disease, unspecified | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| B33.24 | Viral cardiomyopathy | 186 | Heart Failure | 187 | 0.210 | 0.148 | 0.270 | 0.195 | 0.234 |
| B37.1 | Pulmonary candidiasis | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |
| B37.7 | Candidal sepsis | 5 | Opportunistic Infections | | 0.337 | 0.409 | 0.335 | 0.262 | 0.270 |

## Demographic Relative Factors for Continuing Enrollees

| VARIABLE | Community, Non-Low Income, Age≥65 | Community, Non-Low Income, Age<65 | Community, Low Income, Age≥65 | Community, Low Income, Age<65 | Institutional |
|---|---|---|---|---|---|
| Female | | | | | |
| 0–34 Years | — | 0.186 | — | 0.460 | 1.978 |
| 35–44 Years | — | 0.323 | — | 0.629 | 2.028 |
| 45–54 Years | — | 0.384 | — | 0.680 | 1.705 |
| 55–59 Years | — | 0.367 | — | 0.615 | 1.538 |
| 60–64 Years | — | 0.328 | — | 0.511 | 1.401 |
| 65–69 Years | 0.156 | — | 0.347 | — | 1.374 |
| 70–74 Years | 0.166 | — | 0.302 | — | 1.226 |
| 75–79 Years | 0.166 | — | 0.252 | — | 1.078 |
| 80–84 Years | 0.142 | — | 0.216 | — | 0.948 |
| 85–89 Years | 0.123 | — | 0.151 | — | 0.831 |
| 90–94 Years | 0.084 | — | 0.085 | — | 0.688 |
| 95 Years or Over | — | — | — | — | 0.489 |
| Male | | | | | |
| 0–34 Years | — | 0.200 | — | 0.498 | 2.005 |
| 35–44 Years | — | 0.253 | — | 0.573 | 1.875 |
| 45–54 Years | — | 0.305 | — | 0.573 | 1.671 |
| 55–59 Years | — | 0.329 | — | 0.532 | 1.46 |
| 60–64 Years | — | 0.334 | — | 0.476 | 1.308 |
| 65–69 Years | 0.190 | — | 0.319 | — | 1.239 |
| 70–74 Years | 0.177 | — | 0.286 | — | 1.088 |
| 75–79 Years | 0.180 | — | 0.252 | — | 1.021 |
| 80–84 Years | 0.125 | — | 0.238 | — | 0.936 |
| 85–89 Years | 0.043 | — | 0.171 | — | 0.819 |
| 90–94 Years | — | — | 0.123 | — | 0.7 |
| 95 Years or Over | — | — | 0.046 | — | 0.527 |

## Non-Aged Disease Interactions

| VARIABLE | Disease Group | Community, Non-Low Income, Age≥65 | Community, Non-Low Income, Age<65 | Community, Low Income, Age≥65 | Community, Low Income, Age<65 | Institutional |
|---|---|---|---|---|---|---|
| NonAged_RXHCC1 | NonAged *HIV/AIDS | — | — | — | — | 1.172 |
| NonAged_RXHCC130 | NonAged *Schizophrenia and Other Psychosis | — | — | — | — | 0.290 |
| NonAged_RXHCC131 | NonAged *Bipolar Disorders | — | — | — | — | 0.276 |
| NonAged_RXHCC132 | NonAged *Depression | — | — | — | — | 0.119 |
| NonAged_RXHCC133 | NonAged *Anxiety and OtherPsychiatric Disorders | — | — | — | — | — |
| NonAged_RXHCC159 | NonAged *Multiple Sclerosis | — | — | — | — | 1.315 |
| NonAged_RXHCC163 | NonAged *Intractable Epilepsy | — | — | — | — | 0.274 |