

# Measure Information for the Risk-standardized Acute Cardiovascular-related Hospital Admission Rates for Patients with Heart Failure under the Merit-based Incentive Payment System (MIPS) Groups

## Performance Year (PY) 2024 Heart Failure Measure Code Specifications

January 1 – December 31, 2024

### A. Measure Name

Risk-standardized Acute Cardiovascular-related Hospital Admission Rates for Patients with Heart Failure under the Merit-based Incentive Payment System

### B. Measure Description

The measure is a risk-standardized rate of acute, unplanned cardiovascular-related acute hospital admissions for the Merit-based Incentive Payment System (MIPS) among Medicare Fee-for-Service (FSS) patients aged 65 years and older with heart failure (HF) or cardiomyopathy. The measure attributes admissions to MIPS participating clinicians and/or clinician groups, as identified by their National Provider Identifiers (NPIs) and Medicare Taxpayer Identification Number (TIN) and assesses each clinician's or clinician group's admission rate.

### C. Rationale

Patients with heart failure (HF) or cardiomyopathy are vulnerable to a range of complications that may put them at risk for cardiovascular-related hospitalizations, including worsening of HF symptoms and destabilization due



to other conditions, such as respiratory disease or infection. The risk for hospitalization may relate to an individual's clinical and social/community risk factors but is also affected by the quality of care received, including adoption of guideline-directed medical therapy, early intervention for acute symptoms, care coordination across providers, and support for self-management.

Acute unplanned cardiovascular-related admission rates are an effective marker of ambulatory care quality for patients with HF or cardiomyopathy. Patients receiving optimal care should use fewer unplanned inpatient services than those who do not or those who receive fragmented care. There is strong evidence supporting the assertion that ambulatory care clinicians can influence acute unplanned admission rates by providing high quality of care [1-13]. These studies highlighted several features of care delivery that were associated with lower admission rates: strong care coordination across providers, provision of evidence-based care and education for patients, strong medication management, comprehensive and timely transitional care after hospitalization, and continuity of care [1-13].

Additional details on rationale can be found in original measure information forms (MIFs) in the resource library on the Quality Payment Program website at: <https://qpp.cms.gov/resources/resource-library>.

#### **D. Measure Outcome (Numerator)**

The outcome for this measure is the number of acute unplanned cardiovascular-related admissions per 100 person-years at risk for admission during the measurement period.

##### **Excluded Admissions:**

This measure does not include the following types of admissions in the outcome because they do not reflect the quality of care provided by ambulatory care clinicians who are managing the care of HF patients:

- Planned cardiovascular-related hospital admissions
- Admissions that occur directly from a skilled nursing facility (SNF) or acute rehabilitation facility
- Admissions that occur within a 10-day “buffer period” of time after discharge from a hospital, SNF, or acute rehabilitation facility

- Admissions that occur after the patient has entered hospice
- Admissions before first visit to provider if no visit in year prior to measure period
- Admissions following left ventricular assist device (LVAD) implantation, start of home inotropic therapy, or heart transplant

A comprehensive list of the measure outcome exclusions utilizing the Agency for Healthcare and Research (AHRQ) Clinical Classifications Software (CCS) diagnosis categories is available in the MIPS MCC Data Dictionary (code specification report) via links provided in [Section I](#).

Clarification regarding the 10-day “buffer period”:

The 10-day “buffer period” is a numerator (or outcome) exclusion but it also affects the denominator (person-time at risk). The 10-day buffer period (10 days following discharge from a hospital) is a period of transition back to community-based care, and other factors in addition to ambulatory care, including care received in the hospital and post-discharge planning, contribute to the risk of admission; therefore, the measure does not hold clinicians accountable for admissions in this timeframe. This buffer period allows time for patients to be seen within seven days of discharge as recommended in CMS’s Transitional Care Management (TCM) service guidelines and for the ambulatory care provider’s care plan to take effect. CMS’s TCM service guidelines encourage providers to have a face-to-face visit within seven days of discharge for Medicare patients with high medical decision complexity.

#### **Identification of planned admissions:**

The planned admission algorithm was based on CMS’s Planned Readmission Algorithm Version 4.0, which was originally created to identify planned readmissions for the hospital-wide readmission measure. In brief, the algorithm uses a flowchart and four tables of procedure and/or discharge diagnosis categories to identify planned admissions.

A comprehensive list of category and ICD-10 codes used in the planned readmission algorithm is available in the MIPS HF Data Dictionary (code specifications report) via links provided in [Section I](#). Person-time at risk:

Persons are considered at risk for hospital admission if they are alive, enrolled in FFS Medicare, and not in the hospital. In addition to time spent in the hospital, the measure also excludes from at-risk time: 1) time spent in a SNF or acute rehabilitation facility; 2) the time within 10 days following discharge from a hospital, SNF, or acute rehabilitation facility; and 3) time after entering hospice care.

### **E. Population Measured (Denominator)**

This measure assesses the care provided to patients with heart failure by primary care providers and cardiologists.

Patients included in the measure (target patient population):

The target patient population for the outcome includes Medicare FFS patients aged 65 years and older with heart failure (HF) or cardiomyopathy. The inclusion criteria are:

- Patient has one principal discharge diagnosis of HF/cardiomyopathy from inpatient codes or at least two outpatient or inpatient HF/cardiomyopathy diagnoses (if no primary inpatient HF/cardiomyopathy diagnoses) in any coding position (for example, primary or secondary position) within the two years prior to the measurement year. The codes that define the cohort are in table 1 of the data dictionary
- Patient is aged  $\geq 65$  years at the start of the year prior to the measurement period
- Patient is a Medicare FFS beneficiary with continuous enrollment in Medicare Parts A and B during the year prior to the measurement period

Provider types included for measurement:

Because the measure uses the outcome of acute cardiovascular-related admissions to assess quality, the measure limits the clinicians covered (those to whom CMS will attribute patients for measure score calculation) to two categories of providers for whom this outcome reflects care quality. This includes primary care providers (PCPs) and cardiologists.

Primary care providers (PCPs): CMS designates PCPs as physicians who practice internal medicine, family medicine, general medicine, or geriatric medicine, and non-physician providers, including nurse practitioners, certified clinical nurse specialists, and physician assistants.

Cardiologists: Cardiologists are covered by the measure because they provide overall coordination of care for patients with HF and manage the conditions that put HF patients at risk for admission due to acute cardiovascular-related conditions. The measure does not include advanced heart failure/transplant specialists for attribution given that patients with most severe heart failure may be concentrated among these provider types.

## **F. Exclusions**

The measure excludes patients from the cohort for five reasons.

- Patients without continuous enrollment in Medicare Part A or B during the measurement period
- Patients who were in hospice at any time during the year prior to the measurement year or at the start of the measurement year
- Patients who have had a heart transplant, been on home inotropic therapy, or who have had a left ventricular assist device (LVAD) placed
- Patients with end stage renal disease (ESRD) or chronic kidney disease (CKD) Stage 5
- Patients who had no E&M visits with a MIPS eligible clinician

## **G. Data Collection Approach and Measure Collection**

This measure is calculated from Medicare inpatient claims, Medicare outpatient claims (hospital outpatient and Part B Carrier claims), Medicare beneficiary enrollment data, Durable Medical Equipment claims, the American Community Survey, and the Area Health Resource Files.

The measure is reported only for MIPS eligible clinicians, groups, subgroups, virtual groups, and APM Entities that include at least 1 cardiologist.

## H. Methodological Information and Measure Construction


### Attribution:

The measure begins by assigning each patient to the clinician most responsible for the patient's care, based on the pattern of outpatient visits with PCPs and relevant specialists. The patient can be assigned to a PCP, a cardiologist, or can be left unassigned. Patients who have had no Evaluation and Management (E&M) visits with a MIPS eligible clinician are excluded.

**Step 1:** A patient who is eligible for attribution is assigned to a cardiologist only if the cardiologist has been identified as "dominant." A cardiologist is considered "dominant" if they have two or more visits with the patient, regardless of how many visits that patient has with a PCP.

- There are two scenarios where a patient can be assigned to a PCP. First, if the patient has seen the PCP at least once but has no visits with a cardiologist, the patient is assigned to the PCP. The patient will then be assigned to the PCP with the highest number of visits as long as there are no relevant specialists who are considered "dominant." Second, if the patient has only one visit with a cardiologist and has seen the PCP at least twice, the patient is assigned to the PCP
- If the patient has one visit each with a cardiologist and a PCP, the patient is assigned to the cardiologist
- If the patient has one visit with a cardiologist and no visit with a PCP, the patient is assigned to the cardiologist
- Finally, the patient will be unassigned if they only saw non-relevant specialists, if the patient has not seen a PCP and no "dominant" specialist can be identified, or if the patient has not had more than one visit with any individual PCP

**Step 2:** Patients are then assigned at the Taxpayer Identification Number (TIN) level, which includes solo clinicians and groups of clinicians who have chosen to report their quality under a common TIN. At the TIN level, patients are first assigned to the clinician (NPI/TIN) most responsible for their care (using the algorithm for individual clinician-level attribution above). Then, patients "follow" their attributed clinician to the TIN of that clinician. Patients




unassigned at the individual clinician level continue to be unassigned at the TIN level.

#### Calculation Algorithm/Measure Logic:

The measure first identifies the cohort of HF patients by applying the inclusion/exclusion criteria. The measure then uses the attribution algorithm to assign patients to MIPS providers. Patients are assigned to the individual clinician (PCP or cardiologist) most responsible for their care, and then subsequently to the TIN designated by the clinician, using our visit-based attribution algorithm. Attribution is done in the measurement period and only patients assigned to a MIPS-eligible clinician will be included in the measure score calculation. The number of admissions and time at risk in the measurement period are then calculated for each patient based on our outcome definition. Factors to be used in risk adjustment are determined in the risk-adjustment period. For the score calculation, the measure uses a hierarchical (two-level) statistical model that accounts for the clustering of patients within MIPS providers and accommodates the varying patient sample sizes of different providers. The measure uses a negative binomial with linear variance (NB-1) model since the measure's outcome is a count of the number of admissions for HF patients during the measurement period. The first level of the model adjusts for patient factors (see Risk Adjustment below). The relationship between patient risk factors and the outcome of admissions is determined based on all patients attributed to MIPS-eligible clinicians. Therefore, the "expected" number of admissions (described below) for each provider is based on the performance of all eligible MIPS providers nationwide.

The second level of the model estimates a random-intercept term that reflects the provider's contribution to admission risk, based on their actual admission rate, the performance of other providers, their case mix, and their sample size.

The measure score is a risk-standardized acute unplanned cardiovascular-related admission rate (RSCAR), calculated as the ratio of the number of predicted admissions to the number of expected admissions multiplied by the crude national rate. The predicted to expected ratio of admissions is analogous to an observed over expected ratio, but the numerator accounts



for clustering, sample-size variation, and provider-specific performance. The expected number of admissions is calculated based on the provider's case mix and average intercept among all MIPS providers. The predicted number of admissions is calculated based on the provider's case mix and the estimated provider-specific random intercept term. The algorithm multiplies the predicted to expected ratio for each provider by a constant – the crude rate of acute, unplanned cardiovascular-related admissions among all MIPS providers – for ease of interpretation.

### **Risk Adjustment:**

The risk-adjustment model includes demographic and clinical (including chronic disease groups and measures of frailty) variables as well as social risk factors. Clinical variables are defined primarily using CMS's Condition Categories (CCs), which are clinically meaningful groupings of ICD-10 diagnosis codes. Where ICD-10 codes in CCs overlap with those used in the variables that define the chronic disease groups, those ICD-10 codes were removed from the CCs to eliminate the overlap. Some variables are also defined by subsets of ICD-10 codes within CCs. For details on how risk variables are defined, see the following tabs in the Data Dictionary: MIPS HF All Risk Vars, MIPS HF RVs defined by ICD10s, MIPS HF RVs defined by Pol Grp, MIPS HF CC to ICD Map.

A comprehensive list of the risk adjustment variables categories and ICD-10 codes categories is available in the MIPS HF Data Dictionary (code specifications report) via links provided in [Section I](#).

### **I. Further Information**

**To access additional measure specifications, please visit <https://qpp.cms.gov/about/resource-library>.**



## J. References

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