2015 MEASURE INFORMATION ABOUT THE FOUR PER CAPITA COSTS FOR BENEFICIARIES WITH SPECIFIC CONDITIONS MEASURES, CALCULATED FOR THE 2017 VALUE-BASED PAYMENT MODIFIER PROGRAM

A. Measure Names

Per Capita Costs for Beneficiaries with Specific Conditions measures:

- Per Capita Costs for Beneficiaries with Coronary Artery Disease (CAD)
- Per Capita Costs for Beneficiaries with Chronic Obstructive Pulmonary Disease (COPD)
- Per Capita Costs for Beneficiaries with Diabetes
- Per Capita Costs for Beneficiaries with Heart Failure

B. Measure Description

The Per Capita Costs for Beneficiaries with Specific Conditions measures are payment-standardized, annualized, risk-adjusted, and specialty-adjusted[1] measures that evaluate the efficiency of care provided to beneficiaries with CAD, COPD, diabetes, and heart failure who are attributed to solo practitioners and groups, as identified by their Medicare Taxpayer Identification Number (TIN).[2]

C. Rationale

To support the efforts of TINs that are working to efficiently provide high-quality care to their Medicare Fee-for-Service (FFS) beneficiaries, the Per Capita Costs for Beneficiaries with Specific Conditions measures provide meaningful information about the costs associated with delivering care to beneficiaries with CAD, COPD, diabetes, and heart failure who are attributed to TINs.

The Centers for Medicare & Medicaid Services (CMS) uses the Per Capita Costs for Beneficiaries with Specific Conditions measures in combination with the Per Capita Costs for All Attributed Beneficiaries and Medicare Spending per Beneficiary (MSPB) measures to determine each TIN's relative utilization of health care resources. Information on TINs'

[1] See the descriptions of payment standardization, annualization, risk adjustment, and specialty adjustment in section H for more information.

[2] See the description of attribution in section H for more information.

performance on this measure is included in the 2015 Annual and Mid-Year Quality and Resource Use Reports (QRURs) and used in the calculation of the 2017 Value Modifier.

The information in this document was used to calculate these measures for the 2017 Value Modifier (based on calendar year 2015 data) as shown in the 2015 Annual QRUR. The 2015 Mid-Year QRUR provides a preview of each TIN's performance on these measures based on data from July 1, 2014 to June 30, 2015.

D. Measure Outcome (Numerator)

The outcome for each measure is the sum of Medicare Part A and Part B costs for each of the beneficiaries who have the given condition (CAD, COPD, diabetes, or heart failure). Costs are payment standardized, annualized, risk adjusted, and specialty adjusted (see the links to additional resources and descriptions of payment standardization, annualization, risk adjustment, and specialty adjustment in section H for more detail on measure construction).[3]

E. Population Measured (Denominator)

After applying the exclusions outlined in section F, all Medicare beneficiaries attributed to a TIN who received Medicare-covered services and have the chronic condition associated with each measure (CAD, COPD, diabetes, or heart failure) are included in the calculation of a TIN's Per Capita Costs for Beneficiaries with Specific Conditions measure for that condition. For example, an attributed beneficiary with COPD who was not subject to any exclusions in section F below would be included in the denominator of the Per Capita Costs for Beneficiaries with COPD measure. Beneficiary attribution follows a two-step process (described in section H) that assigns a beneficiary to a single TIN based on the amount of primary care services received and the provider specialties that performed these services.

F. Exclusions

Beneficiaries are excluded from the population measured if they meet any of the following conditions:

- were not enrolled in both Medicare Part A and Part B for every month during the performance period unless part year enrollment was the result of new enrollment or death
- were enrolled in a private Medicare health plan (for example, a Medicare Advantage HMO/PPO or a Medicare private FFS plan) for any month during the performance period
- resided outside the United States, its territories, and its possessions during the performance period

[3] This measure does not have a traditional numerator and denominator like a process of care measure; see risk adjustment and other resources below for more detail on measure construction.

G. Data Collection Approach and Measure Collection

This measure is calculated from Medicare Part A and Part B paid claims (Parts A and B) for services provided during the performance period that include inpatient hospital; outpatient hospital; skilled nursing facility; home health; hospice; durable medical equipment, prosthetics, orthotics, and supplies (DMEPOS); and Medicare carrier (non-institutional physician/supplier) claims. The measure also uses Medicare beneficiary enrollment data to capture patient characteristics. This measure does not require any additional measure submission by TINs. Medicare Part A and B paid claims are used to attribute beneficiaries to TINs for this measure, as described below. Part D-covered prescription drug costs are not included in the calculation of the Per Capita Costs for Beneficiaries with Specific Conditions measures.

H. Methodological Information and Measure Construction

Measure construction. CMS implements the following three steps to each Per Capita Costs for Beneficiaries with Specific Conditions measure for each TIN: (1) beneficiary costs are payment standardized and annualized, (2) the payment-standardized annualized condition-specific total per capita costs are risk-adjusted, and (3) the payment-standardized, annualized, risk-adjusted, condition-specific costs are then specialty adjusted. Below is an outline of the methodologies used in each step followed by more in-depth discussions of each step.

Payment standardization and annualization methodology for each Per Capita Costs for Beneficiaries with Specific Conditions measure.

The Per Capita Costs for Beneficiaries with Specific Conditions measures are payment standardized to take into account payment factors that are unrelated to the care provided (such as payments supporting larger Medicare program goals like indirect medical education add-on payments, or geographic variation in Medicare payment policies). This allows for a more equitable comparison across providers. More information on the payment standardization algorithm is available at: http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228772057350. [4]

In performance year 2015, part year beneficiaries may be attributed to TINs if the reason for their part year enrollment was either that they were new enrolles in Medicare at some time other than the start of the calendar year or they died during the calendar year. In order to ensure valid comparisons between TINs with part year beneficiaries and those without any part year beneficiaries, CMS annualizes the costs of part year beneficiaries before calculating the total per capita cost measures by dividing the total payment standardized costs for each beneficiary for the calendar year by the fraction of the year the beneficiary had both Part A and Part B coverage. For example, if a beneficiary had both Part A and Part B coverage from January through September, died in October, and had total costs over his 9 months of full coverage of $1,350, then his annualized costs would be equal to $1,800:

[4] The CMS document refers to this process as "price standardization" rather than "payment standardization," but the two terms are equivalent.

$$Annualized\ cost = \$1800 = \frac{\$1350}{\frac{9}{12}}$$

Payment standardization and annualization are implemented using the following steps:

a. Eliminate payments not directly related to services rendered, such as indirect medical education, and disproportionate share hospital payments to hospitals. This step also excludes incentive or penalty payments as the result of programs such as the Value Modifier and PQRS.

b. Substitute a national amount for services paid on the basis of state fee schedules.

c. Adjust outlier payments for differences in area wages.

d. Annualize standardized costs by dividing each beneficiary's costs by the fraction of the year the beneficiary had both Part A and Part B coverage as a result of death or new enrollment.

Risk adjustment methodology for each payment-standardized, annualized Per Capita Costs for Beneficiaries with Specific Conditions measure.

Risk adjustment accounts for beneficiary-level risk factors that can affect medical costs, regardless of the care provided. A TIN's risk-adjusted condition-specific cost is calculated as the ratio of the TIN's actual annualized payment-standardized, non–risk-adjusted condition-specific total per capita cost to its expected annualized condition-specific payment-standardized total per capita cost multiplied by the average annualized payment-standardized, non–risk-adjusted cost across all beneficiaries with the given condition who are attributed to a TIN. If a TIN's annualized, payment-standardized, and risk-adjusted condition-specific total per capita cost is less than its payment-standardized, annualized, non–risk-adjusted condition-specific per capita cost, then the TIN's condition-specific costs were less than expected given the risk of its attributed beneficiaries who have the given condition.

The measures of beneficiary risk used in the risk-adjustment algorithm are the beneficiary's CMS-HCC risk score and ESRD status. To ensure that the model measures the influence of health status (as measured by diagnoses) on the treatment provided (costs incurred), rather than capturing the influence of treatment on a beneficiary's health status, the risk adjustment model uses prior year (2014) risk factors to predict current year (2015) condition-specific per capita costs. A CMS-HCC risk score of 1 indicates risk associated with expenditures for the average beneficiary nationwide. A beneficiary risk score greater than 1 indicates above average risk and a risk score less than 1 indicates below average risk. For new enrollees without a full year of medical history, the risk score is a function of age, sex, and disability status, whereas for beneficiaries with 12 months of Medicare claims medical history, the risk score is based on age, sex, original reason for Medicare entitlement (age or disability), Medicaid enrollment, and medical history. Medicare claims history is assessed using ICD-9 diagnosis codes from Medicare paid claims and spans 79 HCC categories that have related disease characteristics and costs. For more information on risk adjustment, please see the document entitled "Risk Adjustment," available at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2015-RiskAdj-FactSheet.pdf.

Risk adjustment is implemented using the following steps:

a. Replace the top and bottom 1 percentile of the distribution of beneficiary costs with the 99th and 1st percentile value, respectively, (referred to as Winsorization).

b. Determine the TIN's expected annualized payment-standardized, condition-specific total per capita cost based on two risk-adjustment algorithms that account for the age, sex, disability status, CMS hierarchical condition categories (CMS-HCCs)[5], and end-stage renal disease (ESRD) status of its attributed beneficiaries who have the given condition.

c. Compute the ratio of the TIN's actual annualized, payment-standardized, condition-specific total per capita cost to its expected annualized payment-standardized condition-specific total per capita cost.

d. In order to convert the ratio calculated in step "c." above into a dollar amount, multiply the TIN's condition-specific actual-to-expected ratio by the average annualized, payment-standardized, non–risk-adjusted cost across all beneficiaries with the given condition attributed to any TIN. The result is the TIN's payment-standardized, annualized, risk-adjusted condition-specific per capita cost.

Specialty adjustment methodology for the payment-standardized, annualized, risk-adjusted Per Capita Costs for Beneficiaries with Specific Conditions measures.

Specialty adjustment accounts for TIN-level differences in specialty mix that can affect medical costs, regardless of the care provided. The Per Capita Costs for Beneficiaries with Specific Conditions measures are specialty-adjusted so that TINs can be compared more fairly with their peers. Specialty-adjusted condition-specific costs for a TIN with a disproportionate number of specialists with high-cost beneficiaries will be lower than the TIN's non–specialty-adjusted condition-specific costs because the specialists with high-cost beneficiaries will generate expected condition-specific costs that exceed the average condition-specific cost across all TINs; similarly, specialty-adjusted condition-specific costs will be higher than non–specialty-adjusted condition-specific costs for TINs that have a disproportionate number of specialists with low-cost beneficiaries. For more information on specialty adjustment, please see the document "Risk Adjustment," available at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2015-SpecAdj-FactSheet.pdf.

The following steps are used in specialty adjustment:

a. Compute national specialty-specific expected condition-specific costs by taking a weighted average of all TINs' payment-standardized, annualized, and risk-adjusted condition-specific costs across beneficiaries who have the given condition, where the weight for each TIN is calculated as the percent of the TIN's eligible professionals in that specialty, multiplied by the number of the TIN's eligible professionals in that specialty, multiplied by the number of beneficiaries attributed to the TIN who have the given condition.

[5] One algorithm is used for new enrollees and the second is used for all other "continuing" enrollees. Table 1 lists the 79 HCCs included in the community CMS-HCC risk-adjustment model used for continuing enrollees. CMS-HCCs are not included in the new enrollee CMS-HCC risk-adjustment model used for new enrollee beneficiaries.

b. Compute specialty-adjusted expected condition-specific costs for the TIN as the weighted average of the national specialty-specific expected condition-specific costs, where the weight is the percent of the TIN's Part B payments across beneficiaries who have the given condition that were billed by the specialty.

c. Calculate the ratio of the TIN's payment-standardized, annualized, and risk-adjusted condition-specific cost to its specialty-adjusted expected condition-specific cost.

d. Multiply the TIN's ratio by the average payment-standardized, annualized, non–risk-adjusted cost across all beneficiaries with the given condition who are attributed to a TIN in the performance period to obtain the TIN's specialty-adjusted, annualized, risk-adjusted, payment-standardized condition-specific per capita cost.

Attribution. For each Per Capita Costs for Beneficiaries with Specific Conditions measure, beneficiaries are attributed to a single TIN in a two-step process that takes into account the level of primary care services received (as measured by Medicare-allowed charges during the performance period) and the provider specialties that performed these services. Only beneficiaries who received a primary care service during the performance period are considered in attribution. For more information on attribution, please see the document "Two-Step Attribution for Claims-based Quality Outcome Measures and Per Capita Cost Measures Included in the Value Modifier," available at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2016-03-25-Attribution-Fact-Sheet.pdf.

The following two steps are used to attribute beneficiaries to a TIN for each Per Capita Costs for Beneficiaries with Specific Conditions measure:

a. A beneficiary is attributed to a TIN in the first step if the beneficiary received more primary care services (as defined in Table 2) from primary care physicians (PCPs)[6], nurse practitioners (NPs), physician assistants (PAs), and clinical nurse specialists (CNSs) in that TIN than in any other TIN.

b. If a beneficiary did not receive a primary care service from any PCP, NP, PA, or CNS during the performance period, the beneficiary is attributed to a TIN in the second step if the beneficiary received more primary care services from specialist physicians within the TIN than in any other TIN.

I. For Further Information

More information about the 2015 QRURs and 2017 Value Modifier is available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/2015-QRUR.html.

[6] These specialties are defined using the following CMS specialty codes: general practice (01), family practice (08), internal medicine (11), geriatric medicine (38), nurse practitioner (50), certified clinical nurse specialist (89), and physician assistant (92).

J. Tables

Table 1. HCCs included in the CMS-HCC risk-adjustment model[7]

HCC number and brief description of disease/condition	
HCC1 = HIV/AIDS	HCC82 = Respirator Dependence/Tracheostomy Status
HCC2 = Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock	HCC83 = Respiratory Arrest
HCC6 = Opportunistic Infections	HCC84 = Cardio-Respiratory Failure and Shock
HCC8 = Metastatic Cancer and Acute Leukemia	HCC85 = Congestive Heart Failure
HCC9 = Lung and Other Severe Cancers	HCC86 = Acute Myocardial Infarction
HCC10 = Lymphoma and Other Cancers	HCC87 = Unstable Angina and Other Acute Ischemic Heart Disease
HCC11 = Colorectal, Bladder, and Other Cancers	HCC88 = Angina Pectoris
HCC12 = Breast, Prostate, and Other Cancers and Tumors	HCC96 = Specified Heart Arrhythmias
HCC17 = Diabetes with Acute Complications	HCC99 = Cerebral Hemorrhage
HCC18 = Diabetes with Chronic Complications	HCC100 = Ischemic or Unspecified Stroke
HCC19 = Diabetes without Complication	HCC103 = Hemiplegia/Hemiparesis
HCC21 = Protein-Calorie Malnutrition	HCC104 = Monoplegia, Other Paralytic Syndromes
HCC22 = Morbid Obesity	HCC106 = Atherosclerosis of the Extremities with Ulceration or Gangrene
HCC23 = Other Significant Endocrine and Metabolic Disorders	HCC107 = Vascular Disease with Complications
HCC27 = End-Stage Liver Disease	HCC108 = Vascular Disease
HCC28 = Cirrhosis of Liver	HCC110 = Cystic Fibrosis
HCC29 = Chronic Hepatitis	HCC111 = Chronic Obstructive Pulmonary Disease
HCC33 = Intestinal Obstruction/Perforation	HCC112 = Fibrosis of Lung and Other Chronic Lung Disorders
HCC34 = Chronic Pancreatitis	HCC114 = Aspiration and Specified Bacterial Pneumonias
HCC35 = Inflammatory Bowel Disease	HCC115 = Pneumococcal Pneumonia, Empyema, Lung Abscess
HCC39 = Bone/Joint/Muscle Infections/Necrosis	HCC122 = Proliferative Diabetic Retinopathy and Vitreous Hemorrhage
HCC40 = Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	HCC124 = Exudative Macular Degeneration
HCC46 = Severe Hematological Disorders	HCC134 = Dialysis Status
HCC47 = Disorders of Immunity	HCC135 = Acute Renal Failure
HCC48 = Coagulation Defects and Other Specified Hematological Disorders	HCC136 = Chronic Kidney Disease, Stage 5
HCC54 = Drug/Alcohol Psychosis	HCC137 = Chronic Kidney Disease, Severe (Stage 4)
HCC55 = Drug/Alcohol Dependence	HCC157 = Pressure Ulcer of Skin with Necrosis Through to Muscle, Tendon, or Bone
HCC57 = Schizophrenia	HCC158 = Pressure Ulcer of Skin with Full Thickness Skin Loss
HCC58 = Major Depressive, Bipolar, and Paranoid Disorders	HCC161 = Chronic Ulcer of Skin, Except Pressure
HCC70 = Quadriplegia	HCC162 = Severe Skin Burn or Condition
HCC71 = Paraplegia	HCC166 = Severe Head Injury
HCC72 = Spinal Cord Disorders/Injuries	HCC167 = Major Head Injury
HCC73 = Amyotrophic Lateral Sclerosis and Other Motor Neuron Disease	HCC169 = Vertebral Fractures without Spinal Cord Injury
HCC74 = Cerebral Palsy	HCC170 = Hip Fracture/Dislocation
HCC75 = Myasthenia Gravis/Myoneural Disorders,Inflammatory and Toxic Neuropathy	HCC173 = Traumatic Amputations and Complications
HCC76 = Muscular Dystrophy	HCC176 = Complications of Specified Implanted Device or Graft
HCC77 = Multiple Sclerosis	HCC186 = Major Organ Transplant or Replacement Status

[7] This information can be found by navigating to: https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors-Items/Risk2014.html?

Table 2. Healthcare Common Procedure Coding System (HCPCS) primary care service codes

HCPCS codes	Brief description
99201–99205	New patient, office, or other outpatient visit
99211–99215	Established patient, office, or other outpatient visit
99304–99306	New patient, nursing facility care
99307–99310	Established patient, nursing facility care
99315–99316	Established patient, discharge day management service
99318	Established patient, other nursing facility service
99324–99328	New patient, domiciliary or rest home visit
99334–99337	Established patient, domiciliary or rest home visit
99339–99340	Established patient, physician supervision of patient (patient not present) in home, domiciliary, or rest home
99341–99345	New patient, home visit
99347–99350	Established patient, home visit
G0402	Initial Medicare visit
G0438	Annual wellness visit, initial
G0439	Annual wellness visit, subsequent
G0463	Hospital outpatient clinic visit (Electing Teaching Amendment hospitals only)

Note: Labels are approximate. For more details, see the American Medical Association's Current Procedural Terminology and the CMS website (http://www.cms.gov/Medicare/Coding/HCPCSReleaseCodeSets/HCPCS_Quarterly_Update.html).