2016 MEASURE INFORMATION ABOUT THE PER CAPITA COSTS FOR ALL ATTRIBUTED BENEFICIARIES MEASURE, CALCULATED FOR THE 2018 VALUE-BASED PAYMENT MODIFIER PROGRAM

A. Measure Name

Per Capita Costs for All Attributed Beneficiaries measure

B. Measure Description

The Per Capita Costs for All Attributed Beneficiaries measure is a payment-standardized, annualized, risk-adjusted, and specialty-adjusted[1] measure that evaluates the overall efficiency of care provided to beneficiaries attributed to solo practitioners and groups, as identified by their Medicare Taxpayer Identification Number (TIN).[2]

C. Rationale

To support the efforts of providers who are working to efficiently provide high-quality care to their Medicare Fee-for-Service (FFS) beneficiaries, the Per Capita Costs for All Attributed Beneficiaries measure provides meaningful information about the costs associated with delivering care to beneficiaries attributed to their TINs.

The Centers for Medicare & Medicaid Services (CMS) uses the Per Capita Costs for All Attributed Beneficiaries measure in combination with the Medicare Spending per Beneficiary (MSPB) and Per Capita Costs For Beneficiaries with Specific Conditions measures to determine each TIN's relative utilization of health care resources. Information on TINs' performance on this measure is included in the 2016 Annual Quality and Resource Use Reports (QRURs) and used in the calculation of the 2018 Value-Based Payment Modifier (referred to here as the Value Modifier).

[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.

D. Measure Outcome

The outcome for this measure is the sum of Medicare Part A and Part B costs for each beneficiary. 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

After applying the exclusions outlined in section F, all Medicare beneficiaries who received Medicare-covered services and are attributed to a TIN during the performance period are included in the calculation of the TIN's Per Capita Costs for All Attributed Beneficiaries 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 any month of the performance period

G. Data Collection Approach and Measure Collection

This measure is calculated from Medicare Part A and Part B final action claims 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 Part B final action 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 All Attributed Beneficiaries measure.

[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.

H. Methodological Information and Measure Construction

Measure construction. CMS implements the following three steps to the Per Capita Costs for All Attributed Beneficiaries measure for each TIN: (1) Medicare Part A and Part B costs for services provided to beneficiaries are payment standardized and annualized, (2) the annualized payment-standardized per capita costs are risk adjusted, and (3) the (annualized payment-standardized) risk-adjusted costs are then specialty adjusted. Below is an outline of the methodologies used in each step followed by more in-depth discussions.

Payment standardization and annualization methodology for the Per Capita Costs for All Attributed Beneficiaries measure.

The Per Capita Costs for All Attributed Beneficiaries measure is 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 in an overview document titled "CMS Price (Payment) Standardization - Basics" and a more detailed document titled "CMS Price (Payment) Standardization - Detailed Methods," available at the following URL: http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228772057350.

In performance year 2016, part year beneficiaries (those who were enrolled in Medicare Part A and Part B for only part of the year) may be attributed to TINs if the reason for their part year enrollment was either that they were new enrollees 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 Medicare Part A and Part B coverage. For example, if a beneficiary had both Medicare Part A and Part B coverage from January through September, died in October, and had total costs of $1,350 over his 9 months of full coverage, then his annualized costs would be equal to $1,800:

$$\text{Annualized cost} = \frac{\$1,350}{\left(\frac{9 \text{ months}}{12 \text{ months}}\right)} = \$1,800$$

For the purpose of this explanatory document, all subsequent instances of "cost" refer to "annualized payment-standardized cost."

Risk adjustment methodology for the Per Capita Costs for All Attributed Beneficiaries measure.

Risk adjustment accounts for beneficiary-level risk factors that can affect medical costs, regardless of the care provided. A TIN's risk-adjusted cost is calculated as the ratio of the TIN's observed non–risk-adjusted total per capita cost to its expected total per capita cost multiplied by the average non–risk-adjusted cost across all beneficiaries who are attributed to any TIN nationwide.[4] The expected cost reflects the TIN's beneficiaries' risk factors. If a TIN's risk-adjusted total per capita cost is less than its non–risk-adjusted total per capita cost, then the TIN's costs were less than expected, given the risk of its attributed beneficiaries.

TIN's risk-adjusted per capita cost =

$$\left(\frac{\text{TIN's observed non-risk-adjusted per capita cost}}{\text{TIN's expected per capita cost}} \right) * \text{national average non-risk-adjusted cost}$$

The measures of beneficiary risk used in the risk-adjustment algorithm are the beneficiary's CMS-Hierarchical Condition Category (CMS-HCC) risk score and End Stage Renal Disease (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 (2015) risk factors to predict current year (2016) 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.

Separate CMS-HCC models exist for new enrollees and continuing enrollees. The new enrollee model accounts for each beneficiary's age, sex, disability status, original reason for Medicare entitlement (age or disability), and Medicaid eligibility and is used when a beneficiary has less than 12 months of medical history. The community model is used when a beneficiary has at least 12 months of medical history. The community model includes the same demographic information as the new enrollee model, but it also accounts for clinical conditions as measured by Hierarchical Condition Categories (HCCs).[5] Medicare claims history is assessed using ICD-9 diagnosis data from January 2015 through September 2015 and ICD-10 diagnosis data from October 2015 through December 2015 from Medicare final action claims and spans 79 HCC categories that have related disease characteristics and costs.

[4] The TIN's observed-to-expected per capita cost ratio is multiplied by the national average non-risk-adjusted cost in order to convert the ratio into a dollar amount.

[5] Table 1 lists the 79 HCCs included in the community CMS-HCC risk-adjustment model used for continuing beneficiaries.

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 total per capita cost based on two risk-adjustment algorithms that account for the age, sex, disability status, original reason for entitlement (age or disability), Medicaid eligibility, CMS-HCCs (for continuing enrollees only), and ESRD status of its attributed beneficiaries.
c. Compute the ratio of the TIN's observed total per capita cost to its expected per capita cost.
d. Multiply the TIN's observed-to-expected ratio by the average non–risk-adjusted cost across all beneficiaries attributed to any TIN. The result is the TIN's risk-adjusted per capita cost.

For more information on risk adjustment, please see the Fact Sheet for Risk Adjustment in the 2018 Value Modifier at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2016-RiskAdj-FactSheet.pdf.

Specialty adjustment methodology for the risk-adjusted Per Capita Costs for All Attributed Beneficiaries measure.

CMS recognizes that costs vary across specialties and across TINs with varying specialty mixes. To support the goal of comparing TINs' costs more accurately to an expected cost that is reflective of their practice, CMS applies specialty adjustment separately to the Per Capita Costs for All Attributed Beneficiaries, Per Capita Costs for Beneficiaries with Specific Conditions, and the Medicare Spending per Beneficiary measures. Specialty-adjusted costs for a TIN with a disproportionate number of providers in specialties with high national average costs will be lower than the TIN's non–specialty-adjusted costs, because the expected costs will exceed the average cost across all TINs; similarly, specialty-adjusted costs will be higher than non–specialty-adjusted costs for TINs that have a disproportionate number of providers in specialties with low national average costs.

For more information on specialty adjustment, please see the Fact Sheet for Specialty Adjustment in the 2018 Value Modifier at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2016-SpecAdj-FactSheet.pdf.

Attribution for Per Capita Costs for All Attributed Beneficiaries measure.

For the Per Capita Costs for All Attributed Beneficiaries 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.

The following two steps are used to attribute beneficiaries to a TIN for the Per Capita Costs for All Attributed Beneficiaries 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), nurse practitioners (NPs), physician assistants (PAs), and clinical nurse specialists (CNSs)[6] 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.

For more information on attribution, please see the Fact Sheet for Attribution in the 2018 Value Modifier at the following URL: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2016-Attribution-Fact-Sheet.pdf.

I. For Further Information

More information about the 2016 QRURs and 2018 Value Modifier is available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/2016-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
HCC78 = Parkinson's and Huntington's Diseases	HCC188 = Artificial Openings for Feeding or Elimination
HCC79 = Seizure Disorders and Convulsions	HCC189 = Amputation Status, Lower Limb/Amputation Complications
HCC80 = Coma, Brain Compression/Anoxic Damage	

[7] This information can be found by navigating to https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors-Items/Risk2014.html?DLPage=1&DLEntries=10&DLSort=0&DLSortDir=descending.

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	New or 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 at the following URL: http://www.cms.gov/Medicare/Coding/HCPCSReleaseCodeSets/HCPCS_Quarterly_Update.html.