

2010 INDIVIDUAL PHYSICIAN QUALITY AND RESOURCE USE REPORTS— DETAILED METHODOLOGY

I. Overview

A. What Are the 2010 Individual Physician Quality and Resource Use Reports (QRURs)?

The 2010 Individual Physician QRURs are confidential feedback reports provided to physicians participating in, and billing, the Medicare program in calendar year 2010 who practiced in Iowa, Kansas, Missouri, or Nebraska. Physicians in these states were chosen because they share a common Medicare Administrative Contractor that could disseminate the reports through electronic mail. The reports contain information on the quality and cost of care provided to Medicare fee-for-service (FFS) beneficiaries whom these physicians treated in 2010.

The feedback reports are integral to the Centers for Medicare & Medicaid Services' (CMS) efforts to support value-based payment (VBP) initiatives to enhance the quality and efficiency of health care services provided to Medicare beneficiaries (see Box A for more information). CMS has pursued a phased approach to physician feedback reporting as a way to expand understanding of policy issues related to measuring physician-driven costs of care and quality. In the current phase of the program, CMS continues to test the design, content, and performance indicators included in physician feedback reports.

The physician feedback program also addresses Section 3007 of the 2010 Affordable Care Act, which directs the Secretary of Health and Human Services to develop and implement a budget-neutral payment system that will employ a value-based payment modifier (VBM). The VBM will be used to adjust Medicare physician fee schedule payments based on the quality and cost of care physicians deliver to Medicare beneficiaries. The VBM will be phased in over a two-year period, beginning in 2015. The current QRURs include some performance measures that may be used for the VBM.

The Link Between the Physician Feedback Program and the Value-Based Payment Modifier

To enhance the quality and efficiency of health care services provided to Medicare beneficiaries, the Centers for Medicare & Medicaid Services (CMS) is developing and implementing a set of value-based purchasing (VBP) initiatives across many health care settings, including physician practices. To support these initiatives, CMS has been developing physician resource use and quality measures, evaluating physicians on their comparative quality and resource use, and educating physicians about the efficient use of resources. These efforts support expanded physician feedback reports detailing physician quality and cost performance, and performance-based payment.

As part of its VBP initiatives, for the past several years CMS has been disseminating under the Physician Feedback Program a limited number of confidential reports to physicians and medical group practices that include measures of resource use and quality. CMS has pursued a phased approach to physician feedback reporting as a way to expand understanding of policy issues related to measuring physician-driven costs of care and quality. In the first phase of the approach (in 2009), CMS distributed and tested approximately 300 reports that included individual physician-level cost measures. The Physician Feedback Program was expanded under Section 3003 of the 2010 Affordable Care Act, which required the Secretary of Health and Human Services to provide confidential information to physicians and groups of physicians about the quality of care furnished to Medicare beneficiaries compared to the cost of that care. In the second phase of the approach (in fall 2010), CMS distributed a larger number of reports, to both individual physicians (about 1,700) and group practices (36), and expanded these reports to include selected quality measures. In the current phase of the program (2011-2012), CMS continues to test the design, content, and performance indicators included in physician feedback reports.

The Physician Feedback Program also supports Section 3007 of the 2010 Affordable Care Act, which directs the Secretary to develop and implement a budget-neutral payment system that will employ a value-based payment modifier. The payment modifier will be used to adjust Medicare physician fee schedule payments based on the quality and cost of care physicians deliver to Medicare beneficiaries. The Secretary will phase in the payment modifier over a two-year period, beginning in 2015, with the initial performance period proposed to be 2013. In 2015, the value-based payment modifier will be calculated on the bases of cost and quality data derived from services delivered in calendar year 2013. In 2015 and 2016, specific physicians and/or groups of physicians that the Secretary determines appropriate will see their fee-for-service payments adjusted under the payment modifier. Beginning in 2017, all physicians paid under the Medicare physician fee schedule will be affected by the modifier. Toward this end, the current physician feedback reports (Quality and Resource Use Reports) are being disseminated to a much larger number of physicians and medical group practices than in earlier phases, and include some performance measures that may be used in determining the payment modifier.

B. What Are the Goals of the QRUR?

A primary goal of these reports is to support physicians' efforts to provide high quality care to their Medicare FFS patients in an efficient and effective manner. A second goal is to highlight each report recipient's degree of involvement with all of their Medicare patients, based on claims submitted to Medicare. A third goal is to begin to provide physicians with quality-of-care and cost information that may be used in the future VBM.

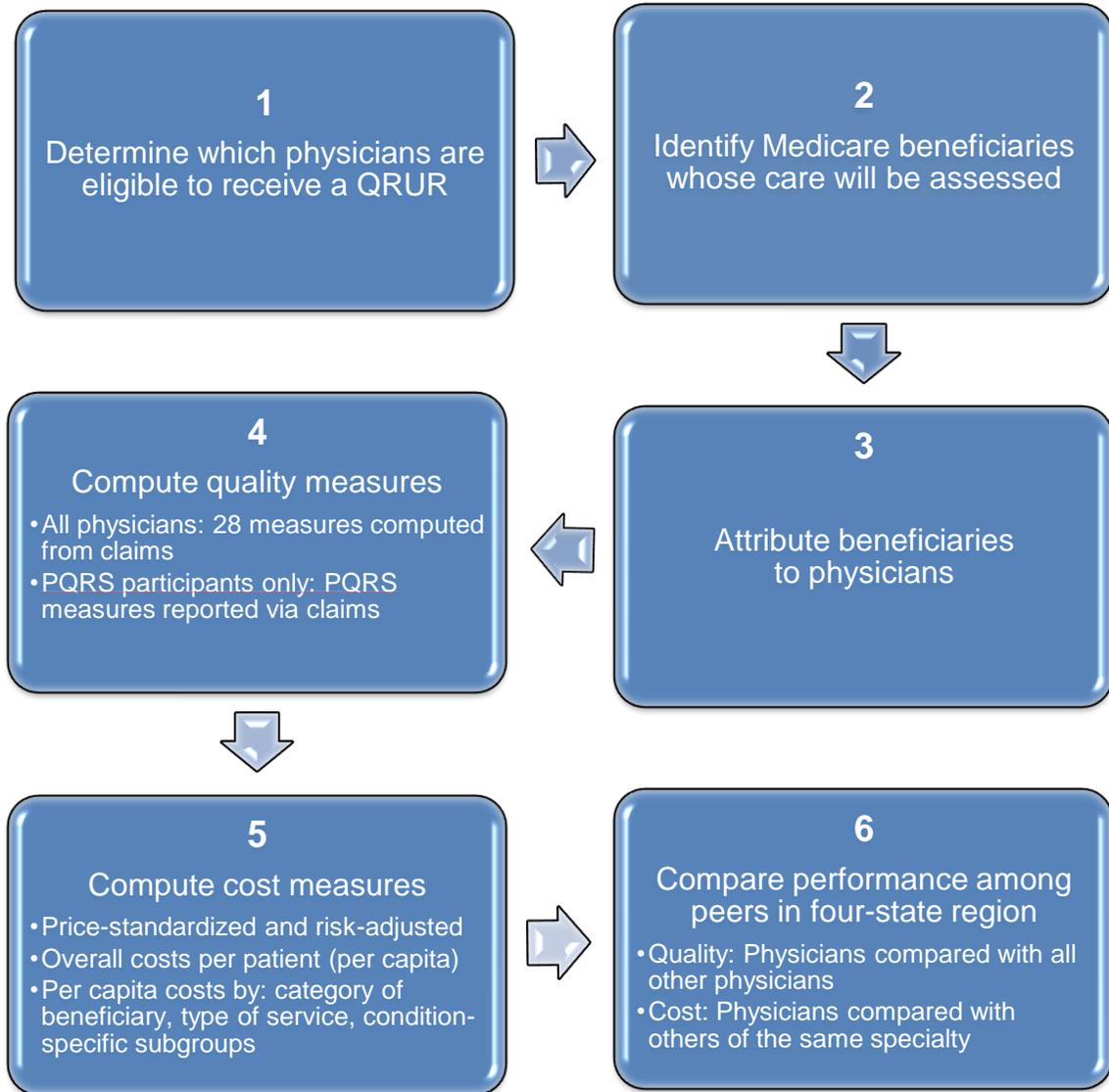
C. What Information Is Included in the QRUR?

The QRURs contain information on 28 quality indicators for preventive care, medication management, and eight separate condition categories such as chronic obstructive pulmonary disease and cancer. These measures are computed solely from Medicare administrative claims, reducing physician reporting burden. In addition, performance on Physician Quality Reporting System (PQRS) measures is reported for physicians who participated in this program through claims-based reporting. Although participants receive a separate report with Physician Quality Reporting System measure results, the QRUR combines this information with other quality indicators and with resource use measures to provide a more complete picture of care provided to the Medicare FFS population. Moreover, a physician's performance on the claims-based and Physician Quality Reporting System-reported quality indicators is compared with performance of all physicians treating Medicare beneficiaries in Iowa, Kansas, Missouri, and Nebraska.

On the cost side, the physician's patients are grouped into different categories according to the extent of care that the physician provided to them. Risk-adjusted per patient costs, which are also adjusted to remove geographic Medicare payment differences, are then computed for each group of patients. Per patient costs are also reported for patients with specific chronic conditions such as diabetes. Each physician's per patient costs are then compared with the costs of all other physicians of the same specialty in the four-state region.

This document offers a detailed explanation of the methodology employed to produce the statistics presented in the reports. Exhibit 1 displays a brief description of the pathway from physician eligibility for the 2010 QRUR to performance computation to peer comparisons.

Exhibit 1. Pathway from Physician Eligibility to Performance Assessment, 2010 Individual Physician Quality and Resource Use Reports (QRURs)



II. Which Medical Professionals Are Eligible to Receive a 2010 QRUR?

To be eligible to receive a 2010 QRUR, a physician—that is, a Doctor of Medicine or a Doctor of Osteopathic Medicine—must have indicated in CMS’ Provider Enrollment, Chain, and Ownership System (PECOS) that their Medicare enrollment state was Iowa, Kansas, Missouri, or Nebraska and have practiced predominantly in one of those states in 2010.¹ A physician was considered to practice predominantly in a state if the physician billed more professional Medicare claims as a performing provider in that state than in any other state.

III. How Were Medicare Beneficiaries Attributed to Physicians?

A. Attribution—Categorization of Beneficiaries

For the Physician Quality Reporting System quality measures, physicians participating in the program self-identified a Medicare beneficiary as his/her patient by submitting a quality data code on the beneficiary’s claim to CMS in 2010. For the claims-based quality and cost measures, all Medicare beneficiaries for whom an eligible physician filed at least one professional claim in 2010 are included in the physician’s Medicare patient panel. Consequently, the same beneficiary may be, and generally is, assigned to multiple physicians. All of these physicians are held accountable for all claims-based quality indicators applicable to that beneficiary.

For the cost measures, each Medicare beneficiary’s relationship with each physician to whom the beneficiary is attributed is categorized in one of three ways, based on the amount of contact the physician had with the beneficiary.

The physician *directed* the beneficiary’s care. For these beneficiaries, the physician billed for 35 percent or more of the patient’s office or other outpatient evaluation and management (E&M) visits (Appendix A lists the specific E&M codes).

The physician *influenced* the beneficiary’s care. For these beneficiaries, the physician billed for fewer than 35 percent of the patient’s outpatient E&M visits but for 20 percent or more of the patient’s total professional costs.

The physician *contributed to* the beneficiary’s care. For these beneficiaries, the physician billed for fewer than 35 percent of the patient’s outpatient E&M visits and for less than 20 percent of the patient’s total professional costs.

¹ PECOS is the electronic system of records that Medicare uses to enroll and maintain information on providers.

B. Which Beneficiaries Were Excluded from the Computation of Claims-Based Measures?

Beneficiaries who were not enrolled in both Parts A and B of original FFS Medicare for all of 2010—including those who first became eligible for Medicare benefits during 2010, were enrolled in a Medicare Advantage program for part of the year, gained or lost Part A or Part B coverage in 2010, or died during the year—were not attributed to any physician for the purposes of computing claims-based quality or cost measures. Also excluded were beneficiaries who (1) were enrolled in FFS Medicare via the Railroad Retirement Board (about 2 percent of the beneficiary population applicable to the QRURs), (2) used Medicare hospice benefits during 2010 (about 2 percent of the beneficiary population applicable to the QRURs) or (3) had any claims for which Medicare was not the primary payer during 2010 (about 3 percent of the beneficiary population applicable to the QRURs). In total, these exclusions applied to approximately 18 percent of beneficiaries seen by physicians residing in the four-state region in 2010. The most commonly excluded beneficiaries were those who did not have Medicare Part A or Part B eligibility during all 12 months of 2010 (mostly beneficiaries newly eligible for Medicare coverage in 2010 and those who died in 2010). Beneficiaries whose costs could not be risk adjusted adequately (as described below) were also excluded when calculating cost, accounting for another 0.05 percent of beneficiaries excluded from the 2010 QRURs.

Persons eligible for Medicare because of age (65 or older) and persons younger than 65 eligible for Medicare benefits due to having end-stage renal disease (ESRD) or a qualifying disability (including amyotrophic lateral sclerosis (ALS)) are included in all quality and cost claims-based measures.

IV. How Is a Physician's Quality of Care Performance Measured?

Two sets of indicators of physician quality of care for Medicare beneficiaries are included in the 2010 QRURs: measures calculated by CMS that rely solely on Medicare administrative claims, and Physician Quality Reporting System measures submitted to CMS by Physician Quality Reporting System program participants.

A. Claims-Based Quality Measures

Performance is displayed in the QRURs for up to 28 claims-based quality measures. A physician's QRUR shows the percentage of Medicare patients for whom the physician filed at least one professional claim in 2010 who received specific recommended clinical services, based on all Medicare claims from all physicians treating them. Because performance is reported even on measures for which the physician is attributed few applicable beneficiaries, the QRUR includes a caution that care should be exercised in making comparisons with peers in such cases.

CMS selected the claims-based quality measures via an internal multi-step process among the agency's Regional Medical Officers (who represent a variety of medical specialties) and other internal experts. This group thoroughly reviewed over 70 clinical claims-based National Quality Forum–endorsed measures and ultimately recommended 28 to include in the 2010 Individual Physician QRURs. The claims-based clinical measures for the 2010 reports are displayed in the Appendix B table at the end of this document; additional information is available at <http://www.cms.gov/physicianfeedbackprogram>.

Claims-based quality measures were calculated solely from Medicare administrative claims submitted for medical services rendered and were not enhanced with additional clinical information. The measurement year, i.e., the period during which services were delivered to patients, used for calculating these measures was January 1, 2010, through December 31, 2010; claims were available for a one-year look-back period to January 1, 2009, for measures requiring a look-back period.

B. Physician Quality Reporting System Measures

In 2006, the President signed the Tax Relief and Health Care Act authorizing the establishment of the Physician Quality Reporting System, a voluntary system under which eligible health care professionals who successfully report quality-measurement data for services provided to Medicare beneficiaries are eligible to earn an incentive payment. In 2010, the incentive payment was equal to 2 percent of the eligible professional's estimated total allowed charges for covered Medicare Part B Physician Fee Schedule (PFS) services. Medicare Advantage beneficiaries are not included in claims-based reporting of individual measures or measures groups. The 179 measures included in the 2010 Physician Quality Reporting System program address various aspects of care, such as prevention, chronic and acute care management, procedure-related care, resource utilization, and care coordination. The 2010 measure list and specifications can be found at <https://www.cms.gov/PQRS/2010/list.asp?listpage=2>.

For each physician participating in the Physician Quality Reporting System, the QRURs provide the number of patients or cases identified by the physician as eligible for inclusion in each measure reported via Medicare claims, as well as the performance rate for that measure.² Performance rates for each measure are shown in the QRUR for all beneficiaries for whom the physician reported successfully. If the physician successfully participated in the Physician Quality Reporting System through different organizations, additional performance - at the NPI-TIN level - is also displayed in the QRUR.

Although all Physician Quality Reporting System measures reported by a physician are displayed in the QRURs, the reports note that if the number of patients is small (fewer than 30), caution should be used in making comparisons with peers.

² Physicians may report a given Physician Quality Reporting System measure by including certain quality data codes on Medicare claims (Current Procedural Terminology Category II or G codes required to compute the measure), through registries, or through electronic health records. Only measures reported via claims by physicians participating in the Physician Quality Reporting System as individuals, rather than as part of a group, are included in the 2010 QRURs.

Additionally, if fewer than 30 physicians in Iowa, Kansas, Missouri, and Nebraska reported the measure, the comparison group performance rate is not displayed.

V. How is a Physician’s Resource Use Measured?

A. Total Per Capita Cost Measures

The QRURs include several resource use measures, all based on “per capita” price-standardized and risk-adjusted costs. For a given physician, per capita costs are calculated as all 2010 Medicare FFS Part A (Hospital Insurance) payments (excluding hospice services payments) and Part B (Medical Insurance) payments to all providers for all beneficiaries—both Medicare beneficiaries age 65 or older and under-age-65-disabled beneficiaries—attributed to the physician, divided by the number of beneficiaries attributed to the physician. (This measure is also known as “per patient” costs.) However, before calculating per capita costs, the cost data are modified in two ways—through price standardization and risk adjustment, described below—in order to accommodate differences in costs between peers that result from circumstances beyond physicians’ control.

Medicare cost measures use 2010 administrative claims data that include inpatient hospital, outpatient hospital, skilled nursing facility, home health, durable medical equipment, and Medicare carrier (non-institutional provider) claims. Part D (outpatient prescription drugs) and hospice claims were not included in the 2010 cost measure calculations. To the extent that Medicare claims include such information, costs comprise payments to providers from Medicare, from beneficiaries (copayments and deductibles), and from third-party private payers. Medicare payments average an estimated 83 percent of total price-standardized costs (see next section below), with most of the non-Medicare share of costs consisting of patient cost-sharing amounts that may or may not have been covered by supplemental health insurance plans.

B. Price Standardization

Price standardization equalizes the costs associated with a specific medical service across all providers of the same type working in a particular health care setting. That is, prices were equalized across services within delivery settings (within the inpatient hospital setting, within the outpatient hospital setting, within ambulatory surgical centers, within long-term care hospitals, etc.), but not across settings. The result is that a given service is priced the same regardless of geographic location or differences in Medicare payment rates. Consequently, price standardization permits valid comparisons among peers who practice in locations or facilities where reimbursement rates are higher or lower. By equalizing the costs of services across providers, comparisons of per capita costs among peers essentially measure differences in resources (valued in dollars) used to treat Medicare beneficiaries.

For most types of medical services, Medicare adjusts payments to providers to reflect differences in local input prices (for example, labor and real estate costs). In other cases, there are special payment rules for rural providers and those in designated provider shortage areas. The price standardization process removes these adjustments so that the same service by the same type of provider carries the same unit cost or “price.”

In some instances, designated classes of providers are singled out to be paid differently from most other providers. For example, most acute care hospitals are paid on a prospective diagnosis-related group (DRG) basis. Critical Access Hospitals, however, are paid retrospectively on a cost basis. In other cases, specific facilities receive differential payments by virtue of their case mix, function, or costs. Examples are disproportionate share and graduate medical education payments to hospitals. Price standardization removes these payment differences so that all classes of providers within the same facility type or setting are assigned identical unit costs for any given service.

As an example of price standardization, for inpatient hospital care, the standardized general pricing approach is to construct a uniform or “base” price for each DRG by averaging total payments (including indirect medical education, disproportionate share hospital, and outlier adjustments) for each DRG across the sample of beneficiaries included in the QRURs hospitalized for that DRG in 2010. Then for a given DRG, all inpatient hospital claims with this DRG are assigned the same “base” Medicare payment amount or price. Appendix C provides further detail on price differential removals by Medicare payment system and provider type.

C. Risk Adjustment

Risk adjustment (also known as case-mix adjustment) takes into account patient differences that can affect their medical costs, regardless of the care provided. In its absence, physicians with sicker patients will appear to have higher costs than those with healthier patients even if all services rendered are priced the same (that is, price standardized). Per capita cost measures for the QRUR are risk adjusted so physicians can be compared more fairly to their peers.

Costs are risk adjusted using prior-year (2009) Hierarchical Condition Category (HCC) “risk scores” derived from the CMS-HCC risk adjustment model that Medicare uses to adjust payments to Medicare Advantage plans. The CMS-HCC risk adjustment model assigns diagnosis codes obtained from Medicare claims to 70 clinical conditions that have related disease characteristics and costs. The model also incorporates sex, age, original reason for Medicare entitlement (either age or disability), and Medicaid entitlement. These risk scores summarize in a single number for each Medicare beneficiary his or her expected cost of care relative to other beneficiaries, given the beneficiary’s demographic profile and medical history. Like the CMS-HCC model, the QRUR risk-adjustment model is prospective—in the sense that it uses 2009 risk scores to predict 2010 costs—to ensure that the model measures the influence of health on treatment provided (costs incurred) rather than the reverse. Risk adjustment for the QRUR per capita cost measures also take account of the presence of ESRD in 2009.

A physician’s risk adjusted per capita cost is based on total observed costs for their assigned set of Medicare beneficiaries divided by total expected costs based on the demographic characteristics and medical history of those beneficiaries. The result is that physicians whose observed treatment costs are lower than their expected costs have lower risk-adjusted per capita costs than physicians whose observed costs exceed expected costs. Appendix D shows the 70 HCCs that CMS incorporates into their risk scores, as well as provides additional detail on the steps for risk adjusting 2010 QRUR per capita costs.

D. Per Capita Costs by Categories of Beneficiaries (Patients)

As described in Section III, for the cost measures, every Medicare beneficiary attributed to an individual physician was assigned to one of three categories, based on the amount of care the particular physician provided to the beneficiary:

- Physicians are presumed to have “**directed**” care for beneficiaries for whom they billed at least **35 percent of the beneficiary’s outpatient E&M services in 2010**
- Physicians “**influenced**” care if they did not direct the beneficiary’s care but accounted for at least **20 percent of the professional costs billed for that beneficiary in 2010**
- Physicians “**contributed**” to care if they treated the beneficiary but **neither directed nor influenced their care in 2010**

A physician’s risk-adjusted per capita cost measure for each category of care employs the risk adjustment model that is estimated for all beneficiaries described above to compute expected costs for only attributed beneficiaries in each of the three categories (for example, beneficiaries whose care the physician directed). The computation of the ratio of observed to expected costs likewise is limited to beneficiaries in the same category of care. This ratio is then multiplied by the mean total beneficiary cost among all beneficiaries to arrive at the physician’s risk-adjusted per capita cost for that category of care.

In the 2010 QRURs, per capita costs by beneficiary category are only displayed for physicians when at least 10 percent of all beneficiaries for whom the physician submitted claims or at least 10 percent of total professional costs billed by the physician are represented by that category of beneficiary. For example, if a physician were attributed 100 beneficiaries with \$100,000 in 2010 medical costs and directed the care of 60 of these beneficiaries, 2010 per capita costs for directed beneficiaries would be displayed on the physician’s QRUR (that is, the physician directed care for 60 percent of the Medicare beneficiaries she treated in 2010). Alternatively, if the physician were attributed 100 beneficiaries with \$100,000 in costs and directed the care of only 5, but those 5 accounted for 15 percent of all attributed costs, again the 2010 per capita costs for directed beneficiaries would be displayed on the physician’s QRUR. (That is, the physician directed care for only 5 percent of the beneficiaries she treated in 2010 but those 5 beneficiaries accounted for 15 percent of the total professional costs she billed for the 100 beneficiaries she treated.) However, if the physician were attributed 100 beneficiaries with \$100,000 in costs and directed the care of 5, who accounted for only \$8,000 of all attributed costs, then this per capita cost measure would not be displayed on the physician’s QRUR.

For cost measures, as well as quality measures displayed in the QRURs, if the number of patients represented or the number of physicians in the peer group for the measure is small (fewer than 30), caution should be used in making comparisons with peers.

E. Per Capita Costs by Type of Service

For each category of beneficiary, the QRURs report per capita costs for all services combined and by detailed type of service (for example, E&M visits, inpatient hospital facility services, laboratory and other tests, and so on), all of which sum to the total. The goal of separating per capita costs into categories of services is to provide physicians with details on how their costs of delivering specific health care services compare with those of their peers. Note, however, that different categories of service can be complements or substitutes. For example, physicians providing more ambulatory preventive care may avoid some hospitalizations of their patients (service substitutes), leading to higher E&M costs but lower inpatient hospital costs compared with peers. On the other hand, increases in primary care services might also be associated with higher ancillary or supplemental services, such as diagnostic tests (service complements). Displaying costs by categories of services provides greater detail on where providers may be able to improve the efficiency of care. CMS chose service categories that (1) correspond to the organization of Medicare claims, and (2) capture distinct types of services that physicians may be able to influence either directly through their own practice patterns (for instance, E&M services) or indirectly through referral patterns or improved outpatient care (which can prevent certain types of hospitalizations). Appendix E displays how costs by categories of services were displayed in the 2010 individual physician QRURs for “directed care” patients. Appendix F provides more detail on how Medicare claims were categorized into one (and only one) service category displayed in the Appendix E table.

Per capita costs by type of service are derived by summing the total costs for a type of service for Medicare beneficiaries attributed to the physician under the beneficiary category (directed, influenced, or contributed) who *used the service* (the numerator). This sum is then divided by the *total number* of beneficiaries attributed to the physician in that category (the denominator), whether or not all attributed beneficiaries used the specific type of service.

Because total per capita costs are risk-adjusted, unadjusted costs for detailed services are scaled by the same factor used to transform unadjusted per capita costs for all services combined to adjusted costs. For example, suppose that risk adjustment results in an overall per capita cost for the physician that is 10 percent lower than the physician’s unadjusted cost. Reported per capita costs for each detailed type of service then are computed by reducing the unadjusted per capita cost for each type of service by 10 percent.

As noted above, per capita costs for a given category of beneficiary are displayed only for physicians when at least 10 percent of all beneficiaries for whom the physician submitted claims or 10 percent of total professional costs billed by the physician are represented by that category of beneficiaries. The QRURs note that if the number of patients or physicians in the peer group for the measure is small (fewer than 30), caution should be used in making comparisons with peers.

F. Per Capita Costs for Condition-Specific Medicare Beneficiary Subgroups

In addition to reporting each physician’s per capita costs for all beneficiaries attributed to the physician, the 2010 QRURs also display per capita costs for attributed beneficiaries with selected chronic health conditions: chronic obstructive pulmonary disease (COPD), coronary artery disease, diabetes, or heart failure. Chronic health conditions are diseases or illnesses that are commonly expected to require ongoing monitoring to avoid loss of normal life functioning, and are not expected to improve or resolve without treatment. Per capita cost measures for these subgroups include all 2010 Medicare claims costs (except for hospice) and are not limited to costs associated with treating the condition itself. Additionally, the four selected chronic conditions are not mutually exclusive, because it is likely that Medicare beneficiaries have more than one of these chronic conditions.

For each subgroup of beneficiaries, a separate risk adjustment model is estimated, using the method described above. Price-standardized and risk-adjusted per capita costs for beneficiaries with each of the conditions are then computed, according to the method described above.

Although all condition-specific per capita cost measures are displayed in the QRUR for which the physician has at least one attributed beneficiary with the chronic condition, the QRURs also note that if the number of patients is small (fewer than 30), caution should be used in making comparisons with peers.

VI. How Are Physician Peer Groups Formed for Comparing Performance?

A physician’s own performance on a quality or cost measure displayed in his/her QRUR is compared to the average of all physicians in a “peer group” to help the physician assess her quality or efficiency of care for her Medicare patients.³ Peer group comparisons also help control for differences in patient risk factors or regional factors that are not accounted for in the cost measures risk adjustment model.

For cost (but not quality) measures, a physician’s performance is compared with the average costs of all physicians of the same medical specialty. Medical specialty was determined from a physician’s 2010 professional claims billed to Medicare. As with practice state, the plurality of CMS specialty codes on all professional claims for which the physician was listed as the “performing provider” determined the physician’s medical specialty for purposes of the 2010 QRURs. Appendix G table at the end of this document displays CMS specialty codes and designation of the specialty as a physician (eligible for a 2010 QRUR) or non-physician (not eligible for a 2010 QRUR).

³ The physician is part of the peer group itself.

Physician peer groups are broader for the quality measures than for the cost measures, as follows:

- **For the 28 claims-based quality measures**, the peer group comprises all physicians eligible to receive a 2010 QRUR (see Section II for eligibility criteria) who practiced in the four state region of Iowa, Kansas, Missouri, or Nebraska in 2010 and who had at least one attributed beneficiary eligible for the specific quality measure.
- **For Physician Quality Reporting System quality measures**, the peer group comprises all physicians eligible to receive a 2010 QRUR (see Section II for eligibility criteria) who practiced in the four state region of Iowa, Kansas, Missouri, or Nebraska in 2010 and who successfully reported the specific quality measure to CMS.
- **For the total per capita cost measure comparison on the QRUR Performance Highlights page**, the peer group comprises all physicians eligible to receive a 2010 QRUR (see Section II for eligibility criteria) of the same medical specialty who practiced in the four state region of Iowa, Kansas, Missouri, or Nebraska in 2010.
- **For per capita cost measures by beneficiary category**, the peer group comprises all physicians eligible to receive a 2010 QRUR (see Section II for eligibility criteria) of the same medical specialty who practiced in the four state region of Iowa, Kansas, Missouri, or Nebraska in 2010. Note that beneficiaries were categorized by the amount of care they received (beneficiary category) and per capita costs were calculated separately for each category of beneficiary before comparing costs among physicians. For example, per capita costs for beneficiaries whose care the physician directed are only compared with other physicians' per capita costs of beneficiaries they directed.
- **For per capita costs by type of service for each beneficiary category**, the peer group was identical to that for per capita cost measures by beneficiary category (above).
- **For per capita cost measures for condition-specific subgroups**, the peer group comprises all physicians eligible to receive a 2010 QRUR (see Section II for eligibility criteria) of the same medical specialty who practiced in the four state region of Iowa, Kansas, Missouri, or Nebraska in 2010. Note that only beneficiaries who had the specified chronic condition are included in the per capita cost measures for peer group physicians.

A physician's own performance on a quality or cost measure is compared to the average (mean) performance across all physicians included in the peer group. **Each peer group physician's performance included in the peer group mean is weighted by the number of his/her beneficiaries eligible for the measure, giving less weight in this benchmark to those with fewer cases.**

Percentile distributions for per capita cost measures by beneficiary category are also displayed for the physician's peer group (same specialty across the four-state region) by ranking the peer group's performance on the measure from lowest to highest cost. A physician's own percentile ranking is shown, as well as the 10th, 50th, and 90th percentile-ranked physician's performance.

APPENDIX A

MEDICARE PART B OUTPATIENT EVALUATION AND MANAGEMENT SERVICE CODES USED TO ATTRIBUTE MEDICARE BENEFICIARIES TO INDIVIDUAL PHYSICIANS IN THE 2010 QRURS

Codes	Outpatient Evaluation and Management Visits*
99201	New Patient, brief
99202	New Patient, limited
99203	New Patient, moderate
99204	New Patient, comprehensive
99205	New Patient, extensive
99211	Established Patient, brief
99212	Established Patient, limited
99213	Established Patient, moderate
99214	Established Patient, comprehensive
99215	Established Patient, extensive

* Labels are approximate. See American Medical Association (AMA) Current Procedural Terminology for detailed definitions.

APPENDIX B

NARRATIVE SPECIFICATIONS FOR 28 CLAIMS-BASED QUALITY MEASURES

(Note that while there are 28 measure categories, there are 41 individual measures within these measure categories)

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Chronic Obstructive Pulmonary Disease (COPD)				
<p>1 Pharmacotherapy Management of COPD Exacerbation</p> <p>Percentage of chronic obstructive pulmonary disease (COPD) exacerbations for patients 40 years or older who had an acute inpatient discharge or emergency department encounter between 1/ 1–11/30 of the measurement year and were dispensed appropriate medications</p>	0549	Administrative Claims	<p>Numerator 1: Medicare beneficiaries dispensed a prescription for systemic corticosteroid on or 14 days after the Episode Date.</p> <p>Numerator 2: Medicare beneficiaries dispensed prescription for a bronchodilator on or 30 days after the Episode Date.</p>	<p><i>Applies to both rates:</i> Medicare beneficiaries (a) 40 years or older as of 1/1/10, (b) had continuous Medicare Parts A, B, and D coverage from the Episode Date through 30 days after the Episode Date with no gaps in coverage (note that the patient must be enrolled on the episode date), and (c) during 1/1/10 through 11/30/10 had an acute inpatient discharge or an emergency department visit with a primary diagnosis of COPD.</p> <p>Note: The eligible population is based on acute inpatient discharges and emergency department visits, not on patients.</p>
Two rates are calculated:				
<p>Rate 1: Percentage of patients dispensed a systemic corticosteroid within 14 days of the event</p>				
<p>Rate 2: Percentage of patients dispensed a bronchodilator within 30 days of the event</p>				

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Chronic Obstructive Pulmonary Disease (COPD) (continued)				
<p>2 Use of Spirometry Testing to Diagnose COPD</p> <p>Percentage of patients at least 40 years old who had a new diagnosis of, or newly active, chronic obstructive pulmonary disease (COPD) and who received appropriate spirometry testing to confirm the diagnosis</p>	0577	Administrative Claims	Medicare beneficiaries with at least one claim or encounter with any HCPCS code for spirometry testing within up to 1.5 years (1/1/2009) before to 180 days after the Index Episode Start Date (IESD).	<p>Medicare beneficiaries who were a) 42 years or older as of 12/31/10, b) had continuous coverage for Medicare Parts A and B from up to 1.5 years prior to the IESD through 180 days after the IESD, with one gap in coverage of up to one month in each 12-month period prior to the IESD or in the 6-month period after the IESD, for a maximum of two gaps, and was covered as of the IESD, and c) had an outpatient, emergency department, or acute inpatient visit with any diagnosis of COPD between 7/1/09 and 6/30/10.</p> <p>Exclusions: None</p>
Bone, Joint, and Muscle Disorders				
<p>3 Osteoporosis Screening for Chronic Steroid Use</p> <p>Percentage of patients 18 years or older on chronic steroids for at least 180 days in the past 9 months and who had a bone density evaluation or osteoporosis treatment</p>	0614	Administrative Claims	Medicare beneficiaries who had a bone density evaluation or osteoporosis treatment between 1/1/10 and 12/31/10.	<p>Medicare beneficiaries 18 years or older as of 12/31/10, with continuous Medicare Parts A, B, and D coverage between 1/1/09 and 12/31/10, who were on chronic steroids for at least 180 days between 4/1/10 and 12/31/10.</p> <p>Exclusions: Medicare beneficiaries with two or more diagnoses of corticoadrenal insufficiency between 1/1/09 and 12/31/10, and pregnant beneficiaries.</p>

	Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Bone, Joint, and Muscle Disorders (continued)					
4	<p>Osteoporosis Management in Women ≥ 67 Who Had a Fracture</p> <p>Percentage of women 67 years or older who suffered a fracture and who had either a bone mineral density (BMD) test or prescription for a drug to treat or prevent osteoporosis in the 6 months following the date of fracture</p>	0053	Administrative Claims	<p>Medicare beneficiaries who were appropriately treated or tested for osteoporosis after the fracture, defined by any of the following: 1) BMD test on the Index Episode Start Date (IESD) or in the 180-day period after the IESD, or 2) BMD test during the inpatient stay for the fracture (applies only to fractures requiring hospitalization), or 3) dispensed prescription to treat osteoporosis on the IESD or in the 180-day period after the IESD</p>	<p>Medicare beneficiaries who were a) 67 years or older as of 12/31/10, b) had 12 months of continuous Medicare Parts A, B, and D coverage prior to the IESD through 6 months after the IESD, with no more than one gap in coverage of up to one month (and the patient must be enrolled on the IESD), and c) have a fracture during the 12-month Intake Period (7/1/09 to 6/30/10).</p> <p>Exclusion: Patients who had a BMD test or who received any osteoporosis treatment during the 365 days prior to the IESD.</p>
5	<p>Disease Modifying Antirheumatic Drug Therapy for Rheumatoid Arthritis</p> <p>Percentage of patients 18 years or older diagnosed with rheumatoid arthritis who had at least one ambulatory prescription dispensed for a disease modifying antirheumatic drug (DMARD) during the measurement year</p>	0054	Administrative Claims	<p>Medicare beneficiaries who were dispensed at least one ambulatory prescription for a disease modifying antirheumatic drug in 2010.</p>	<p>Medicare beneficiaries 1) 18 years or older as of 12/31/10 and who had continuous Medicare Parts A, B, and D coverage with no more than a single one month gap in coverage in 2010, and 2) who had a diagnosis of rheumatoid arthritis between 1/1/10 and 11/30/10.</p> <p>Exclusions: Medicare beneficiaries who were pregnant in 2010 or who were diagnosed with HIV in 2009 or 2010.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Cancer				
<p>6 Breast Cancer Surveillance for Women with a History of Breast Cancer</p> <p>Percentage of female patients 18 years or older with a recent history of breast cancer who had breast cancer surveillance in the past 12 months</p>	0623	Administrative Claims	Female Medicare beneficiaries with a recent history of breast cancer who had breast cancer surveillance (e.g., mammogram, MRI, PET scan) between 1/1/2010 and 12/31/2010.	<p>Female Medicare beneficiaries 18 years or older with a recent history of breast cancer as defined by a combination of breast cancer diagnosis and treatment procedures or medications between 1/1/2009 and 12/31/2010, who had continuous Medicare Parts A and B coverage between 1/1/2010 and 12/31/2010.</p> <p>Exclusions: Female Medicare beneficiaries who had a bilateral mastectomy, bilateral breast implants, or two unilateral mastectomy procedures between 1/1/09 and 12/31/10; or female Medicare beneficiaries who had a unilateral mastectomy, chemotherapy/radiation therapy, or biopsy/excision of breast lesion procedure performed between 10/1/09 and 12/31/10.</p>
<p>7 PSA Monitoring for Men with Prostate Cancer</p> <p>Percentage of males with prostate cancer that have had their prostate-specific antigen (PSA) monitored in the past 12 months</p>	0625	Administrative Claims	Male Medicare beneficiaries who had PSA monitoring between 1/1/2010 and 12/31/2010.	<p>Male Medicare beneficiaries diagnosed with prostate cancer between 1/1/09 and 12/31/10, and who had continuous Medicare Parts A and B coverage between 1/1/10 and 12/31/10.</p> <p>Exclusions: Male Medicare beneficiaries who received prostate cancer treatment between 1/1/10 and 12/31/10.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Diabetes				
<p>8 Dilated Eye Exam for Beneficiaries ≤ 75 with Diabetes</p> <p>Percentage of patients with diabetes ages 18-75 years who received a dilated eye exam by an ophthalmologist or optometrist during the measurement year, or had a negative retinal exam (no evidence of retinopathy) by an eye care professional in the year prior to the measurement year</p>	0055	Administrative Claims	Medicare beneficiaries who had at least one eye exam in 2010.	<p>Medicare beneficiaries between ages 18 and 75 by 12/31/10, who had continuous Medicare Parts A and B coverage in 2010 with no more than a single month gap in coverage, and had type I or type II diabetes.</p> <p>Exclusions: Medicare beneficiaries with evidence of polycystic ovaries or with gestational or steroid induced diabetes during 2009 or 2010.</p>
<p>9 HbA1c Testing for Beneficiaries ≤ 75 with Diabetes</p> <p>Percentage of patients with diabetes ages 18-75 years receiving one or more hemoglobin A1c test(s) (HbA1c) in the measurement year</p>	0057	Administrative Claims	Medicare beneficiaries who had at least HbA1c test in 2010.	<p>Medicare beneficiaries between ages 18 and 75 by 12/31/10, who had continuous Medicare Parts A and B coverage in 2010 with no more than a single month gap in coverage, and had type I or type II diabetes.</p> <p>Exclusions: Medicare beneficiaries with evidence of polycystic ovaries or with gestational or steroid induced diabetes during 2009 or 2010.</p>
<p>10 Urine Protein Screening for Beneficiaries ≤ 75 with Diabetes</p> <p>Percentage of patients with diabetes ages 18-75 years with at least one nephropathy screening test during the measurement year or who had evidence of existing nephropathy</p>	0062	Administrative Claims	<p>Medicare beneficiaries who had medical attention for nephropathy in 2010 (nephropathy screening test or evidence of existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria) or visit to a nephrologist as identified by specialty-provider codes, or evidence of ACE inhibitor/ARB therapy).</p>	<p>Medicare beneficiaries between ages 18 and 75 by 12/31/10, who had continuous Medicare Parts A and B coverage in 2010 with no more than a single month gap in coverage, and had type I or type II diabetes.</p> <p>Exclusions: Medicare beneficiaries with evidence of polycystic ovaries or with gestational or steroid induced diabetes during 2009 or 2010.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Diabetes (continued)				
<p>11 Lipid Profile for Beneficiaries ≤ 75 with Diabetes</p> <p>Percentage of patients with diabetes ages 18-75 years who had an LDL-C test performed during the measurement year</p>	NCQA	Administrative Claims	Medicare beneficiaries who had at least one LDL-C screening test in 2010.	<p>Medicare beneficiaries between ages 18 and 75 by 12/31/10, who had continuous Medicare Parts A and B coverage in 2010 with no more than a single month gap in coverage, and had type I or type II diabetes.</p> <p>Exclusions: Medicare beneficiaries with evidence of polycystic ovaries or with gestational or steroid induced diabetes during 2009 or 2010.</p>
Gynecology				
<p>12 Appropriate Workup Prior to Endometrial Ablation Procedure</p> <p>[Endometrial Sampling or Hysteroscopy with Biopsy Prior to Endometrial Ablation Procedure]</p> <p>Percentage of female patients who had an endometrial ablation procedure during the measurement year and who received endometrial sampling or hysteroscopy with biopsy during the year prior to the ablation procedure</p>	0567	Administrative Claims	Female Medicare beneficiaries who received endometrial sampling or hysteroscopy with biopsy during the year prior to the index date. The index date is the first instance of the endometrial ablation procedure between 1/1/10 and 12/31/10.	<p>Female Medicare beneficiaries who had an endometrial ablation procedure between 1/1/10 and 12/31/10, and had continuous Medicare Parts A and B coverage for the 12-month period prior to the index date.</p> <p>Exclusions: Female Medicare beneficiaries who had an endometrial ablation procedure during the 12-month period prior to the index date.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Heart Conditions				
<p>13 Statin Therapy for Beneficiaries with Coronary Artery Disease</p> <p>Medication Possession Ratio (MPR) for statin therapy for patients 18 years or older with coronary artery disease (MPR = the days supply of medication divided by the number of days in the measurement period)</p>	0543	Administrative Claims	<p>Numerator 1: Beneficiaries who filled at least one prescription for a statin in 2010.</p> <p>Numerator 2: The sum of MPRs for all beneficiaries in 2010.</p> <p>Numerator 3: The number of beneficiaries with MPR \geq 0.80 in 2010.</p>	<p><i>Applies to all three rates:</i> Medicare beneficiaries 18 years or older, alive as of 12/31/10, who had no more than a single month gap in Medicare Parts A, B, and D coverage in 2010 and no more than a single month gap in Medicare Part D coverage during the last 6 months of 2009.</p> <p>Exclusions: Beneficiaries who have a zero or missing value for days supply on any Part D claim for any statin. Beneficiaries with two or more statin prescriptions on the same date of service.</p> <p>Denominator 1: Beneficiaries with a diagnosis of CAD in 2010.</p> <p>Denominator 2: Beneficiaries with a diagnosis of CAD and with at least 2 valid claims for statins in 2010.</p> <p>Denominator 3: Beneficiaries with a diagnosis of CAD and with at least 2 valid claims for statins in 2010.</p>
<p>Three rates are calculated:</p>				
<p>Rate 1: Percentage of patients who were prescribed statin therapy in the measurement year</p>				
<p>Rate 2: Average MPR of patients in the measurement year</p>				
<p>Rate 3: The percentage of patients with MPR \geq 0.80 in the measurement year</p>				
<p>14 Persistence of β-Blocker Treatment After Heart Attack</p> <p>Percentage of patients 18 years or older who were hospitalized with a diagnosis of acute myocardial infarction (AMI) and who received persistent beta-blocker treatment for six months after discharge</p>	0071	Administrative Claims	<p>Medicare beneficiaries 18 years or older who filled at least 75% of the days' supply (\geq135 days) of beta-blockers prescribed, within 180 days following a hospital discharge for AMI.</p>	<p>Medicare beneficiaries 18 years or older, discharged alive from an acute inpatient setting with an AMI between 7/1/09 and 6/30/10, who had continuous Medicare Parts A, B, and D coverage from the discharge date through 180 days after discharge.</p> <p>Exclusions: Medicare beneficiaries with a contraindication to beta-blocker therapy.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Heart Conditions (continued)				
<p>15 Lipid Profile for Beneficiaries with Ischemic Vascular Disease</p> <p>Percentage of patients 18 years or older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) from January 1–November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) in the measurement year and the year prior the measurement year, who had a complete lipid profile during the measurement year</p>	0075	Administrative Claims	Medicare beneficiaries who had a complete lipid profile in 2010.	<p>Medicare beneficiaries 18 years or older by 12/31/10, who had continuous Medicare Parts A and B coverage in 2010 with no more than a single month gap in coverage, and 1) were discharged alive for AMI, CABG, or PCI between 1/1/2009 and 11/1/2009, or 2) had a diagnosis of IVD in both 2009 and 2010.</p> <p>Exclusions: None</p>
Human Immunodeficiency Virus (HIV)				
<p>16 Monitoring for Disease Activity for Beneficiaries with HIV</p> <p>Percentage of patients diagnosed with HIV who received a CD4 count and an HIV RNA level laboratory test in the 180 days (6 months) following diagnosis</p>	0568	Administrative Claims	<p>Medicare beneficiaries who received a CD4 count and an HIV RNA level laboratory test during the 0-6 months after the index date. The index date is defined as the first instance of a diagnosis of HIV between 7/1/2009 and 6/30/2010.</p>	<p>Medicare beneficiaries with a diagnosis of HIV between 7/1/09 and 6/30/10, who had continuous Medicare Parts A and B coverage during the six months after the index date.</p> <p>Exclusions: none.</p>
<p>17 Viral Load Testing for Beneficiaries with Antiviral Therapy for Hepatitis C</p> <p>Percentage of patients 18 years or older with Hepatitis C (HCV) who began HCV antiviral therapy during the measurement year and had HCV viral load testing prior to initiation of antiviral therapy</p>	0584	Administrative Claims	<p>Medicare beneficiaries who had an HCV Viral Load test between 1/1/09 and the initiation of antiviral therapy in 2010.</p>	<p>Medicare beneficiaries 18 years or older as of 12/31/10, diagnosed with HCV in 2009, who started HCV antiviral therapy between 1/1/10 and 12/31/10, and with Medicare Parts A and B coverage ≥ 89% of the time between 1/1/09 and 12/31/10 and Medicare Part D coverage ≥ 89% of the time between 1/1/10 and 12/31/10.</p> <p>Exclusions: Medicare beneficiaries with an inpatient hospitalization between 1/1/09 and 12/31/10 prior to the initiation of antiviral therapy.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Mental Health				
18 Antidepressant Treatment for Depression	0105	Administrative Claims	<p>Numerator 1: Medicare beneficiaries who had at least 84 days of continuous treatment with anti-depressant medication during the 114 days following the Index Prescription Start Date (IPSD), with a gap in medication treatment up to a total of 30 days allowed.</p>	<p><i>Applies to both rates:</i> Medicare beneficiaries 18 years or older as of 12/31/2010, who were diagnosed with a new episode of major depression during the intake period (5/1/09 to 4/30/10) and who were treated with anti-depressant medication. Beneficiary must have had continuous coverage for Medicare Parts A, B, and D for 120 days prior to the new episode through 245 days after the new episode with no more than a single month gap in coverage.</p> <p>Exclusions: None</p>
Two rates are calculated:				
<p>Rate 1: Effective Acute Phase Treatment</p> <p>[Acute Phase Treatment (at least 12 weeks)]</p> <p>Percentage of patients who were diagnosed with a new episode of depression and treated with antidepressant medication and who remained on an antidepressant medication treatment for at least 84 days (12 weeks)</p>				

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Mental Health (continued)				
Antidepressant Treatment for Depression (continued)			Numerator 2: Medicare beneficiaries who had at least 180 days of continuous treatment with anti-depressant medication during the 231 days that followed the Index Prescription Start Date (IPSD), with a gap in medication treatment up to a total of 51 days allowed.	
Rate 2: Effective Continuation Phase Treatment				
[Continuation Phase Treatment (at least 6 months)]				
Percentage of patients who were diagnosed with a new episode of depression and treated with antidepressant medication and who remained on an antidepressant medication treatment for at least 180 days (6 months)				
19 Follow-Up After Hospitalization for Mental Illness	0576	Administrative Claims		<p><i>Applies to both rates:</i> Medicare beneficiaries who were a) 6 years or older as of the date of discharge, b) had continuous Medicare Parts A and B coverage on the date of discharge through 30 days after discharge, with no gaps in coverage, c) were discharged alive from an acute inpatient setting (including acute care psychiatric facilities) with a principal mental health diagnosis between 1/1/10 and 12/1/10. <i>Note:</i> The eligible population for this measure is based on discharges, not patients.</p>
Percentage of discharges for patients who were hospitalized for treatment of selected mental health disorders and who had an outpatient visit, an intensive outpatient encounter, or partial hospitalization with a mental health practitioner after discharge				Exclusions: None

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Follow-Up After Hospitalization for Mental Illness (<i>continued</i>)				
Two rates are calculated:				
Rate 1: Percentage of patients who received follow-up within 30 days of discharge			Numerator 1: Medicare beneficiaries with an outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner on or within 30 days of hospital discharge.	
Rate 2: Percentage of patients who received follow-up within 7 days of discharge			Numerator 2: Medicare beneficiaries with an outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner on or within 7 days of hospital discharge.	
Prevention				
20 Breast Cancer Screening for Women ≤ 69 Percentage of female patients ages 40-69 years who received a mammogram during the measurement year or in the prior year	0031	Administrative Claims	Medicare beneficiaries who had one or more mammograms during 2009 or 2010.	Female Medicare beneficiaries ages 42-69 years as of 12/31/10 with continuous Medicare Parts A and B coverage during 2009 and 2010 with no more than a single month gap in coverage, and who did not have any hospice claims in 2009 or 2010. Exclusions: Female Medicare beneficiaries who had a bilateral mastectomy and for whom claims data do not indicate that a mammogram was performed. If claims for 2 separate mastectomies are found, the beneficiary is excluded. The bilateral mastectomy must have occurred by 12/31/2010.

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Medication Management				
<p>21 Lipid Profile for Beneficiaries Who Started Lipid-Lowering Medications</p> <p>Percentage of patients 18 years or older starting lipid-lowering medication during the measurement year who had a lipid panel checked within 3 months after starting drug therapy</p>	0583	Administrative Claims	Medicare beneficiaries who had a serum lipid panel drawn within 90 days following the start of lipid-lowering therapy.	<p>Medicare beneficiaries 18 years or older as of 12/31/10, who newly started on lipid-lowering medication between 1/1/10 and 10/02/10, who had continuous Medicare Parts A and B coverage for the 90 days following lipid onset date and continuous Part D coverage for the 180 days prior to the lipid onset date, and had continuous use of lipid-lowering medication for the 90 days following lipid onset date. Lipid onset date is defined as the earliest instance of a Medicare drug claim for lipid-lowering medication between 1/1/10 and 10/02/10.</p> <p>Exclusions: Medicare beneficiaries with a Medicare drug claim for a lipid-lowering medication in the 180 days prior to the lipid onset date, and beneficiaries who had an inpatient hospitalization from 0 to 90 days after the lipid onset date.</p>
<p>22 Annual Monitoring for Beneficiaries on Persistent Medications</p> <p>Percentage of patients 18 years or older who received at least 180 treatment days of ambulatory medication therapy for a select therapeutic agent in the measurement year and at least one therapeutic monitoring event for the therapeutic agent in the measurement year</p>	0021	Administrative Claims	<p><i>Applies to all five rates:</i> Medicare beneficiaries 18 years or older as of 12/31/10 who had continuous Medicare Parts A, B, and D coverage with no more than a single month gap in coverage in 2010.</p> <p>Persistence is defined as receiving a 180-day supply of medication in 2010.</p> <p>Exclusions: Medicare beneficiaries who had an acute or non-acute hospital stay in 2010.</p>	

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Medication Management (continued)				
Annual Monitoring for Beneficiaries on Persistent Medications (continued)				
Five rates are calculated:				
Rate 1: Angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARB)			Numerator 1: Medicare beneficiaries who had at least one serum potassium and either serum creatinine or blood urea nitrogen test in 2010.	Denominator 1: Who were on persistent ACE/ARB medications.
Rate 2: Digoxin			Numerator 2: Medicare beneficiaries who had at least one serum potassium and either serum creatinine or blood urea nitrogen test in 2010.	Denominator 2: Who were on persistent digoxin medications.
Rate 3: Diuretics			Numerator 3: Medicare beneficiaries who had at least one serum potassium and either serum creatinine or blood urea nitrogen test in 2010.	Denominator 3: Who were on persistent diuretic medications.
Rate 4: Anticonvulsants			Numerator 4: Medicare beneficiaries who had at least one drug serum concentration test for the prescribed drug in 2010. If a patient is on multiple anticonvulsants, then there must be evidence that the beneficiary received the appropriate test for each drug.	Denominator 4: Who were on persistent anticonvulsant medications.
Rate 5: Total rate = sum of 4 previous numerators divided by sum of 4 previous denominators			Sum of numerators for Rates 1-4	Sum of denominators for Rates 1-4

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Medication Management (continued)				
<p>23 Anticoagulation Treatment \geq 3 Months after Deep Vein Thrombosis</p> <p>Percentage of patients diagnosed with lower extremity deep vein thrombosis (DVT) who had at least 3 months of anticoagulation after the event, or patients showing compliance with anticoagulation therapy as indicated by a Home PT Monitoring device or multiple instances of prothrombin time testing over the 3-month period following the event</p>	0581	Administrative Claims	<p>Medicare beneficiaries who had at least 3 months of anticoagulation after being diagnosed with lower extremity DVT, or beneficiaries showing compliance with anticoagulation therapy as indicated by a Home PT Monitoring device or multiple instances of prothrombin time testing over the 3-month period following the diagnosis.</p>	<p>Medicare beneficiaries diagnosed with a lower extremity DVT between 1/1/10 and 9/30/10, who had continuous Medicare Parts A and B coverage from 7/1/09 through 12/31/10, and Medicare Part D coverage for at least 90 days following the DVT onset date. The onset of DVT is defined as the earliest instance of lower extremity DVT between 1/1/10 and 9/30/10.</p> <p>Exclusions: Medicare beneficiaries with contraindication to warfarin therapy between 7/1/09 and 12/31/10 (contraindications include: evidence of eye surgery, GI bleed, aortic dissection, cerebral aneurysm, pericarditis, bacterial endocarditis, pregnancy, bleeding diatheses, or head trauma); or who had an inferior vena cava (IVC) filter within 90 days after the onset of DVT.</p>
<p>24 Anticoagulation Treatment \geq 3 Months after Pulmonary Embolism</p> <p>Percentage of patients diagnosed with a pulmonary embolism (PE) who had at least 3 months of anticoagulation after the event, or patients showing compliance with anticoagulation therapy as indicated by a Home PT Monitoring device or multiple instances of prothrombin time testing over the 3-month period following the event</p>	0593	Administrative Claims	<p>Medicare beneficiaries who had at least 3 months of anticoagulation after being diagnosed with PE, or beneficiaries showing compliance with anticoagulation therapy as indicated by a Home PT Monitoring device or multiple instances of prothrombin time testing over the 3-month period following the diagnosis.</p>	<p>Medicare beneficiaries diagnosed with a PE between 01/01/10 and 09/30/10, who had continuous Medicare Part D coverage from onset date to 90 days thereafter, and who had continuous Medicare Parts A and B coverage from 7/1/09 through 12/31/10. PE onset date is defined as the earliest instance of a PE diagnosis between 1/1/10 and 9/30/10.</p> <p>Exclusions: Medicare beneficiaries with contraindication to warfarin therapy between 7/1/09 and 12/31/10 (contraindications include: evidence of neurologic surgery, eye surgery, GI bleed, aortic dissection, cerebral aneurysm, pericarditis, bacterial endocarditis, pregnancy, bleeding diatheses, or head trauma), or who had an inferior vena cava (IVC) filter within 90days after the onset of PE.</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Medication Management (continued)				
<p>25 INR Testing for Beneficiaries Taking Warfarin and Interacting Anti-Infective Medications</p> <p>Percentage of episodes with an International Normalized Ratio (INR) test performed 3 to 7 days after a newly-started interacting anti-infective medication for patients of patients 18 years or older receiving warfarin</p>	0556	Administrative Claims	Number of episodes for which Medicare beneficiaries prescribed warfarin had an INR test performed 3 to 7 days after the start date of an anti-infective medication.	<p>Medicare beneficiaries 18 years or older, alive at the end of 2010, with no more than a single month gap in coverage for Medicare Parts A, B, and D, and who had at least two claims for warfarin with different service dates in 2010. The denominator value is the number of episodes for these beneficiaries with a newly-started interacting anti-infective medication that had overlapping days' supply of warfarin.</p> <p>Exclusions: Beneficiaries with a diagnosis of cancer and beneficiaries with mechanical heart valves who are monitoring their INR at home.</p>
<p>26 Drugs to be Avoided for Beneficiaries ≥ 65</p> <p>Two rates are calculated:</p> <p>Rate 1: Patients who receive at least one drug to be avoided</p> <p>Percentage of patients 65 years or older who received at least one high-risk medication in the measurement year</p>	0022	Administrative Claims	<p>Numerator 1: Medicare beneficiaries with at least one prescription dispensed for any high-risk medication during 2010.</p>	<p><i>Applies to both rates:</i> Medicare beneficiaries who were a) 65 years or older as of 12/31/10, and b) had continuous Medicare Parts A, B, and D coverage in 2010 with no more than one gap in enrollment of up to one month. (Note: The patient must be covered as of 12/31/10.)</p>

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Medication Management (continued)				
Drugs to be Avoided for Beneficiaries ≥ 65 (continued)				
Rate 2: Patients who receive at least two different drugs to be avoided			Numerator 2: Medicare beneficiaries with at least two prescriptions dispensed for different high-risk medications during 2010.	
Percentage of patients 65 years or older who received >= 2 different high-risk medications in the measurement year				
27 Potentially Harmful Drug-Disease Interactions for Beneficiaries ≥ 65	NCQA	Administrative Claims		<i>Applies to all four rates:</i> Medicare beneficiaries who were a) 67 years or older as of 12/31/10, b) had continuous Medicare Parts A, B, and D coverage in 2010 and 2009, with no more than one gap in coverage of up to one month during each year (and the patient must be covered as of 12/31/10), and:
Percentage of patients 65 years or older who have evidence of an underlying disease, condition or health concern and who were dispensed an ambulatory prescription for a contraindicated medication, concurrent with or after the diagnosis				
Four rates are calculated:				
Rate 1: Prescription for tricyclic antidepressants, antipsychotics or sleep agents for patients with a history of falls			Numerator 1: Medicare beneficiaries dispensed an ambulatory prescription for a tricyclic antidepressant or an antipsychotic or sleep agent on or between the Index Episode Start Date (IESD) and 12/31/10.	Denominator 1: Had an accidental fall or hip fracture between 1/1/09 and 12/1/10. Rate 1 Exclusions: Medicare beneficiaries with a diagnosis of psychosis between 1/1/09 and 12/1/10.

Measure Title and Description	NQF Measure Number or Measure Steward*	Source of Data	Numerator Statement	Denominator Statement
Medication Management (continued)				
Potentially Harmful Drug-Disease Interactions for Beneficiaries ≥ 65 (continued)				
Rate 2: Prescription for tricyclic antidepressants or anticholinergic agents for patients with dementia			Numerator 2: Medicare beneficiaries dispensed an ambulatory prescription for a tricyclic antidepressant or anticholinergic agent on or between the IESD and 12/31/10.	Denominator 2: Had a diagnosis of dementia or a dispensed dementia medication between 1/1/09 and 12/1/10. Rate 2 Exclusions: None
Rate 3: Prescription for non-aspirin NSAIDs or Cox-2 Selective NSAIDs for patients with Chronic renal failure (CRF)			Numerator 3: Medicare beneficiaries dispensed an ambulatory prescription for an NSAID or Cox-2 selective NSAID on or between the IESD and 12/31/10.	Denominator 3: Had a diagnosis of CRF between 1/1/09 and 12/1/10. Rate 3 Exclusions: None
Rate 4: Total rate = (sum of 3 previous numerators divided by sum of 3 previous denominators)			Sum of numerators for Rates 1-3	Sum of denominators for Rates 1-3
28 Lack of Monthly INR Monitoring for Beneficiaries on Warfarin Average percentage of 40-day intervals in which patients with claims for warfarin did not receive an International Normalized Ratio (INR) test during the measurement period	0555	Administrative Claims	Sum of the percentage of 40-day intervals without an INR test for each beneficiary in the denominator.	Medicare beneficiaries 18 years or older, alive at the end of 2010, with continuous Medicare Parts A, B, and D coverage in 2010 with no more than a single month gap in coverage, and who had warfarin claims for at least 40 days during 2010. Exclusions: Beneficiaries monitoring INR at home.

*The National Quality Form (NQF) measure number is reported unless the measure is not NQF-endorsed, in which case the measure steward is reported.

APPENDIX C

PRICE STANDARDIZATION BY MEDICARE PAYMENT SYSTEM AND PROVIDER TYPE

Prices (also known as “unit costs”) were standardized to remove geographic price differences and some provider-type payment differentials for the six Medicare claims types used in the 2010 Individual Physician QRUR cost measures: inpatient hospital, outpatient hospital, skilled nursing facility, home health, durable medical equipment, and Medicare carrier (professional provider) claims; hospice claims and Part D outpatient prescription drug claims were not used. In general, three aspects of the Medicare payment system were standardized:

1. ***Payment adjustments based on the geographic location in which the service is provided.*** Nearly all of CMS’ payment systems make adjustments to reflect geographic differences in the cost of labor and other inputs to the production of medical services. That is, CMS first applies a “base payment rate” to the service, and then differentially increases this payment amount based on the relative local prices of service inputs so that services delivered in higher-cost standard of living areas get paid more than services provided in a lower-cost area of the country. The pricing standardization process for the QRURs “backs-out” or removes these cost of living differentials, basically bringing all prices back to a standard “base case” payment. In other instances, there are special payment rules for rural providers and those in designated provider shortage areas. In addition, some services are priced at the Medicare Administrative Contractor (MAC) level, with each MAC serving different geographic areas. Service costs were standardized to remove such differences before computing QRUR per capita cost measures.
2. ***Payment adjustments for different levels of payment associated with different payment systems for classes of providers.*** In some instances, designated classes of providers of a given type are singled out to be paid on a basis different from that of most other providers. For example, most acute care hospitals are paid on a prospective diagnosis-related group (DRG) basis. Critical Access Hospitals (CAHs), however, are paid retrospectively on a cost basis. Standardization ensures so that all classes of providers within the same facility type or setting were assigned identical unit costs for any given service.
3. ***Payment adjustments for provider-specific differences in payment.*** In some cases, specific facilities receive differential payments by virtue of their case mix, function, or costs. Examples are disproportionate share and indirect graduate medical education payments to hospitals. Standardization removes the impact of these payments on a provider’s costs and ensures that all like providers within a given payment system face the same unit cost structure. In essence, then, the per capita cost measures capture resource use across different providers rather than price differentials that a physician might not have control over.

A. General Approaches for Standardizing Unit Costs of Services

Methods by which payments to providers are determined vary depending on the type of provider and require distinct approaches to creating standardized unit costs. A key dividing line is between those systems that pay providers retrospectively (for example, FFS) according to a fee schedule, and those that pay prospectively, where Medicare pays providers a fixed, or quasi-fixed, sum for a bundle of services determined by patient condition or diagnosis (for example, hospital DRG payments). There are also a couple of hybrid payment systems, discussed more below. General approaches to creating standardized unit costs in retrospective and prospective payment systems are described first and details about specific payment systems are then provided.

1. Create Standardized Unit Costs for Retrospective Payment Systems

Medicare pays retrospectively for physician services, clinical laboratory services, Part B drugs, ambulance services, and durable medical equipment (DME). Professional and ambulance services are paid according to fee schedules, where fees are adjusted by geographic practice cost indices (GPCIs) to account for differences in the cost of inputs; Part B drugs are paid mostly according to the average sales price; DME is paid according to state fee schedules while clinical lab prices are set by carriers, subject to national limits.

In two payment systems, the Medicare program sets prospective per-diem rates for skilled nursing facility (SNF) and psychiatric facility services, but then pays retrospectively according to length of stay. These payment systems are characterized as retrospective/prospective hybrids.

Depending on the presence of a national fee schedule and other data-related factors, standardized unit costs were set to “base” fee-schedule values (actual allowed charges for which geographic adjusters have been removed) or based on average allowed charges in 2010. Standardized unit costs for hybrid systems were based on the average per diem payment multiplied by length of stay. Thus, differences in costs for the same service provided across like provider types (e.g., all office-based physicians or all hospital-based physicians) capture resource use differences rather than price or payment differences due to Medicare payment adjustments.

2. Create Standardized Unit Costs for Prospective Payment Systems

Medicare costs for services such as hospital care and home health are paid through prospective payment systems. With some exceptions, the Medicare standardized payment for these services in the QRURs is based on average costs across patients with a given diagnosis or functional presentation, not on the actual costs expended for that patient. For example, for inpatient hospital care, the standardized general pricing approach is to construct a standardized or “base” price for each DRG by averaging total payments (including indirect medical education, disproportionate share hospital, and outlier adjustments) in each DRG across the same of beneficiaries included in the QRURs. Then for a given DRG, all inpatient hospital claims with this DRG are assigned the same Medicare payment amount or price.

Table C.1 below summarizes the Medicare payment factors and pricing differentials standardized on for each of the 16 Medicare payment systems that exist for different classes of providers or services.

B. Adjust Standardized Prices Based on Empirical Comparisons of Standardized Price to Actual Medicare Price

After running each standardized pricing program described, to check for outliers, the ratio of total Medicare payment (allowable charges in the case of Part B claims) to the standardized price is calculated for each claim. If the ratio falls in the top or bottom one percent of the distribution of this ratio across all similar claims, the standardized price is reset to equal the actual Medicare payment, under the assumption that the data used to set these standardized prices may not be entirely accurate. Such extreme values more likely occur for services where there are quantities involved, which are often recorded incorrectly in claims. A thorough empirical review of outliers found that, rather than dropping outlier claims, it was more accurate to set the standardized price equal to the actual Medicare payment. The limits for this ratio were determined through examination of a univariate distribution of the ratio for each standardized pricing algorithm.

Table C.1 Standardized Factors for Unit Cost (Price) Standardization Methodology

Payment System	Basic Approach	What Is Standardized?		
		Geographic Adjustments	Payment Across Classes of Providers	Provider-Specific Adjustments
Physician Services	For each service/location of service (i.e., facility/non-facility), allowable charges adjusted to eliminate GPCI adjustments (CMS uses GPICs to adjust payments for geographic variation in the costs of providing services). Adjustment factors are specific to each service/physician setting/location, based on the relative contribution of work, practice expense, and professional liability insurance (PLI) RVUs to total RVUs.	GPCI adjustments (to account for differences in input costs across CMS’ 89 payment areas)		
		Payment difference across carrier regions (for Carrier-priced services)		
Anesthesiology Services	Allowable charges divided by the anesthesia conversion factor for the geographic area	GPCI adjustments (to account for differences in input costs across CMS’ 89 payment areas)		
Part B Drugs	Average per unit payment in 2010 by HCPCS code multiplied by number of units	Payment difference across carrier regions (for Carrier-priced drugs)		
Clinical Laboratory Services	Assign National Limitation Amount (NLA) value, based on HCPCS code	Differences across Carrier regions in fee schedule amounts are standardized		Payment is reduced if provider charges are below Carrier fee schedule amount. We eliminate this reduction.
Ambulance Services	Average payment in 2010 by ambulance HCPCS code	Payment differences across Medicare payment areas	During PPS phase-in period, payment differences between hospital and free-standing providers	During PPS phase-in period, component of payment based on old provider-specific charge or cost-based payment.
		Rural add-on payments		Differences in average distance of trips.
Ambulatory Surgical Centers (community based)	Assignment of 2010 APC conversion factor times APC relative weight (with adjustments for modifiers), matched on HCPCS code	Adjustments for local wage levels, based on hospital wage index (varies by metropolitan areas and non-metropolitan parts of a state)		

Payment System	Basic Approach	What Is Standardized?		
		Geographic Adjustments	Payment Across Classes of Providers	Provider-Specific Adjustments
Hospital acute Inpatient Services	Average national payment by DRG, with adjustments for departmental or hospital transfers	Adjustments for local wage rates based on hospital wage index and geographic adjustment factor (GAF)	CAHs paid on cost-basis. We assign average DRG payment (including IME and DSH), the same as hospitals paid prospectively.	Disproportionate share hospital (DSH) adjustments
		Cost of living adjustments—COLA (AK and HI only)	Maryland hospitals, which are paid under the state's system and are not part of the PPS system. We assign average DRG payment (including IME and DSH), the same as hospitals paid prospectively.	Indirect graduate medical education (IME) adjustments
				Hospital bad debt adjustments
Long-term Care Hospitals	Long-term care (LTC) base rate times LTC-DRG relative weight, by LTC-DRG	Adjustments for local wage levels, based on hospital wage index		
Inpatient Rehabilitation Facilities	Assign 2010 mean national payment per case mix group	Adjustments for local wage levels, based on hospital wage index		DSH
		Added payment to Inpatient Rehabilitation Facilities located in rural areas		IME
Inpatient Psychiatric Facilities and Psychiatric Units in Hospitals	Assign mean national per diem payment in 2010 for each psychiatric DRG, multiply by Length of Stay and then adjust to account for variable per diem adjusters	Adjustments for local wage levels, based on hospital wage index		Differential payment depending on whether the facility has an emergency department.
		COLA adjusters		IME
		Rural location adjustments		During PPS phase-in period, component of payment based on old provider-specific charge or cost-based payment

Payment System	Basic Approach	What Is Standardized?		
		Geographic Adjustments	Payment Across Classes of Providers	Provider-Specific Adjustments
Skilled Nursing Facilities	Assign 2010 mean national payment per Resource Utilization Group score	Adjustments for local wage levels, based on hospital wage index	Swing beds in CAHs	
		Differential payment levels for urban and rural SNFs		
Home Health	Medicare payment amount divided by the percent attributed to labor and capital times the wage index plus the percent attributed to non-labor. When the number of visits in episode are <5, standardize unit cost based on sum of nationally set per visit amounts associated with type of visit listed in claim, consistent with payment rules.	Adjustments for local wage levels, based on hospital wage index		
Hospital outpatient services paid under Outpatient Prospective Payment System (OPPS)	Assign services paid under OPSS their relevant Ambulatory Payment Classification (APC) value (conversion value times APC relative weight). Payment discounts for multiple procedures made.	Adjustments for local wage levels, based on hospital wage index	Add on payment for sole rural hospitals	
		Hold harmless adjustments for cancer, children's, and small rural hospitals	CAHs paid on a cost basis	
			Indian health service facilities paid on a cost basis	
			Maryland hospitals paid under state's payment system	
Hospital outpatient services not covered under OPSS (e.g., therapy services, clinical lab services, ESRD, etc.)	Mean national payment by HCPCS code in 2010 is assigned, adjusted for number of units where applicable	Adjustments for local wage levels, based on hospital wage index	Differential payments based on type of facility (e.g., hospital based vs. free-standing dialysis facilities)	
Durable medical equipment	Average national payment by HCPCS code-modifier code combination. Modifiers account for new vs. used equipment, rental vs. purchase.	State-level differences in payment schedules		Reductions in payment if provider charges are below state fee schedule amount

APPENDIX D

QRUR PER CAPITA COST RISK ADJUSTMENT STEPS

In computing per capita costs for the QRURs, data representing each beneficiary are risk adjusted. The risk adjustment process involves several steps, beginning with preparing the data for risk adjustment at the beneficiary level and culminating with the computation of a physician-specific risk-adjusted per capita cost for attributed beneficiaries that serves as the basis for comparison among physicians in the same peer group.

1. **Calculate each beneficiary's total 2010 costs.** Sum each beneficiary's total Medicare claims costs for 2010 (except for hospice and Part D outpatient prescription drugs) after costs are price standardized.
2. **Exclude beneficiaries with lowest costs.** Remove beneficiaries with total 2010 price-standardized Medicare costs in the bottom one percent of all beneficiaries (lowest costs) from further analysis.⁴
3. **Modify high outlier costs prior to risk adjustment.** Also, to limit the influence of outlier costs on the risk adjustment model, the total patient costs for beneficiaries in the top one percent (highest costs) were set at the 99th percentile of the distribution of total patient costs, a process known as Winsorization.
4. **Exclude beneficiaries without a risk score.** Because the HCC risk score is a fundamental component of the risk adjustment model, beneficiaries who lack a 2009 risk score (either a community or a new enrollee risk score) or who have multiple (community or new enrollee) risk scores are dropped from the model. (These two reasons caused about 0.05 percent of beneficiaries to be dropped from the risk adjustment model.) Table D.1 below displays the 70 HCCs that CMS uses in its model to produce HCC risk scores.

⁴ All claims following price standardization with a \$0 payment amount were dropped from the analysis, so no beneficiary has total 2010 price-standardized costs equal to \$0.

5. **Estimate a beneficiary-level regression model to compute expected beneficiary costs.** Winsorized price-standardized total patient costs (the independent variable in a statistical regression model) of retained beneficiaries for 2010 are regressed on the following independent variables:⁵

- 2009 HCC community risk score
- 2009 HCC community risk score squared
- 2009 HCC new enrollee risk score
- 2009 HCC new enrollee risk score squared
- 2009 indicator of end-stage renal disease

Beneficiaries with community scores do not have new enrollee scores (that is, the new enrollee score is equal to zero for that beneficiary in the regression), and vice versa. The regression yields a set of coefficients, one per independent variable, that are used to estimate expected beneficiary costs.

6. **Compute expected costs at the beneficiary level.** For each beneficiary attributed to a given physician, use the coefficients from the estimated regression model to compute the beneficiary's expected costs.

7. **Compute the ratio of observed to expected costs at the physician level.** For each physician, sum the total price-standardized (but non-risk-adjusted) patient costs for all beneficiaries attributed to the physician, and divide that sum by the sum of expected costs computed for the same set of beneficiaries.

8. **Compute risk-adjusted per capita costs.** For each physician, multiply the ratio of observed to expected costs computed in step 7 by the mean price-standardized (but non-risk-adjusted) total patient cost across all beneficiaries in the sample.

⁵ There are separate CMS-HCC models for new enrollees (the New Enrollee Model) and established enrollees (the Community Model). The New Enrollee Model adjusts payments based on age, gender, and disability status, whereas the Community Model incorporates medical history.

Table D.1. Hierarchical Condition Categories (HCCs) Included in CMS' Medicare Advantage 2009 Risk Adjustment Model

HCC Number and Brief Description of Disease/Condition	
HCC1 = HIV/AIDS	HCC75 = Coma, Brain Compression/Anoxic Damage
HCC2 = Septicemia/Shock	HCC77 = Respirator Dependence/Tracheostomy Status
HCC5 = Opportunistic Infections	HCC78 = Respiratory Arrest
HCC7 = Metastatic Cancer and Acute Leukemia	HCC79 = Cardio-Respiratory Failure and Shock
HCC8 = Lung, Upper Digestive Tract, and Other Severe Cancers	HCC80 = Congestive Heart Failure
HCC9 = Lymphatic, Head and Neck, Brain, and Other Major Cancers	HCC81 = Acute Myocardial Infarction
HCC10 = Breast, Prostate, Colorectal and Other Cancers and Tumors	HCC82 = Unstable Angina and Other Acute Ischemic Heart Disease
HCC15 = Diabetes with Renal or Peripheral Circulatory Manifestation	HCC83 = Angina Pectoris/Old Myocardial Infarction
HCC16 = Diabetes with Neurologic or Other Specified Manifestation	HCC92 = Specified Heart Arrhythmias
HCC17 = Diabetes with Acute Complications	HCC95 = Cerebral Hemorrhage
HCC18 = Diabetes with Ophthalmologic or Unspecified Manifestation	HCC96 = Ischemic or Unspecified Stroke
HCC19 = Diabetes without Complication	HCC100 = Hemiplegia/Hemiparesis
HCC21 = Protein-Calorie Malnutrition	HCC101 = Cerebral Palsy and Other Paralytic Syndromes
HCC25 = End-Stage Liver Disease	HCC104 = Vascular Disease with Complications
HCC26 = Cirrhosis of Liver	HCC105 = Vascular Disease
HCC27 = Chronic Hepatitis	HCC107 = Cystic Fibrosis
HCC31 = Intestinal Obstruction/Perforation	HCC108 = Chronic Obstructive Pulmonary Disease
HCC32 = Pancreatic Disease	HCC111 = Aspiration and Specified Bacterial Pneumonias
HCC33 = Inflammatory Bowel Disease	HCC112 = Pneumococcal Pneumonia, Emphysema, Lung Abscess
HCC37 = Bone/Joint/Muscle Infections/Necrosis	HCC119 = Proliferative Diabetic Retinopathy and Vitreous Hemorrhage
HCC38 = Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	HCC130 = Dialysis Status
HCC44 = Severe Hematological Disorders	HCC131 = Renal Failure
HCC45 = Disorders of Immunity	HCC132 = Nephritis
HCC51 = Drug/Alcohol Psychosis	HCC148 = Decubitus Ulcer of Skin
HCC52 = Drug/Alcohol Dependence	HCC149 = Chronic Ulcer of Skin, Except Decubitus
HCC54 = Schizophrenia	HCC150 = Extensive Third-Degree Burns
HCC55 = Major Depressive, Bipolar, and Paranoid Disorders	HCC154 = Severe Head Injury
HCC67 = Quadriplegia, Other Extensive Paralysis	HCC155 = Major Head Injury
HCC68 = Paraplegia	HCC157 = Vertebral Fractures without Spinal Cord Injury
HCC69 = Spinal Cord Disorders/Injuries	HCC158 = Hip Fracture/Dislocation
HCC70 = Muscular Dystrophy	HCC161 = Traumatic Amputation
HCC71 = Polyneuropathy	HCC164 = Major Complications of Medical Care and Trauma
HCC72 = Multiple Sclerosis	HCC174 = Major Organ Transplant Status
HCC73 = Parkinsons and Huntingtons Diseases	HCC176 = Artificial Openings for Feeding or Elimination
HCC74 = Seizure Disorders and Convulsions	HCC177 = Amputation Status, Lower Limb/Amputation Complications

APPENDIX E

QRUR SAMPLE DISPLAY OF PER CAPITA COSTS BY CATEGORIES OF SERVICES FOR “DIRECTED CARE” BENEFICIARIES

Service Category	Medicare Patients Whose Care You Directed			Average for Medicare Patients Whose Care Was Directed by [#] Physicians in Your Specialty in Iowa, Kansas, Missouri, & Nebraska			Amount by Which Your Medicare Patients’ Per Capita Costs Were Higher (or Lower) than Average
	Your Medicare Patients Using Any Service in This Category		Total Risk-Adjusted Per Capita Costs	Medicare Patients Using Any Service in This Category		Total Risk-Adjusted Per Capita Costs	
	Number	Percentage		Number	Percentage		
All Services	#	100%	\$XX,XXX	#	100%	\$XX,XXX	(\$X,XXX)
Evaluation and Management Services in All Settings							
Provided by YOU for Your Patients	#	%	\$XX,XXX	#	%	\$XX,XXX	(\$X,XXX)
Provided by OTHER Physicians Treating Your Patients							
Procedures in All Settings							
Provided by YOU for Your Patients							
Provided by OTHER Physicians Treating Your Patients							
Inpatient and Outpatient Facility Services							
Inpatient Hospital Facility Services							
Outpatient and Emergency Services							
Clinic or Emergency Visits							
Procedures							
Laboratory and Other Tests							
Imaging Services							
Services in Ambulatory Settings							
All Ancillary Services							
Laboratory and Other Tests							
Imaging Services							
Durable Medical Equipment							
Post-Acute Care Services							
All Post-Acute Services							
Skilled Nursing Facility							
Psychiatric, Rehab, or Other Long-Term Facility							
Home Health							
Other Services							
All Other Services							

APPENDIX F

DETAILED DESCRIPTION OF CATEGORIES OF SERVICES METHOD

Table F.1. Categorization Codes for Type of Service Categories

Category		Claim Type(s)	Claim (or Line) Item Falls Into This Category If It Meets the Following Criteria	
			Criteria 1	Criteria 2
1	E&M services	Carrier (-Ambulatory Surgical Center [ASC] costs)	BETOS in (All M1-M6)	AND HCFA_Specialty code NOT in (45, 47, 49, 51-54, 58-61, 63, 69, 73-75, 87, 88, and any specialty code beginning with A or B)
2	Procedures	Carrier(- ASC costs)	BETOS in (All P1-P9)	
3	Inpatient hospital facility	Inpatient	All short-stay inpatient claims	
4	Outpatient and ER services: total	Outpatient + ASC costs from Carrier	BETOS in (M1-M6, P1-P9, T1, T2, I1-I4)	
4a	Outpatient/ER: Clinic or emergency visits	Outpatient + ASC costs from Carrier	BETOS in (All M1-M6)	
4b	Outpatient/ER: Procedures	Outpatient + ASC costs from Carrier	BETOS in (All P1-P9)	
4c	Outpatient/ER: Laboratory tests	Outpatient + ASC costs from Carrier	BETOS in (all T1, T2)	Not applicable
4d	Outpatient/ER: Imaging services	Outpatient + ASC costs from Carrier	BETOS in (all I1- I4)	
5a	Ancillary services: Laboratory tests (independent)	Carrier	BETOS in (all T1, T2)	
5b	Ancillary services: Imaging services	Carrier	BETOS in (all I1-I4)	
5c	Ancillary services: Durable medical equipment	DME	All DME claims	
6a	Post-acute services: Skilled nursing facilities	SNF	All SNF claims	
6b	Post-acute services: Psychiatric or Rehabilitation facility	Inpatient	Psychiatric and rehabilitation facility payments from the inpatient claims file	
6c	Post-acute services: Home health	Home health	All home health claims	

Appendix F provides detail on how Medicare claims were categorized into one (and only one) service category displayed in the Appendix E sample table from the 2010 Individual Physician QRUR. Claim costs are included in a given service category based on the claim file (for example, all SNF claims in the 2010 SNF administrative claims file are included in category 6; note that categories 3 and 6b are also based on provider type) or based on claim file and Berenson-Eggers Type of Service (BETOS) codes (for example, all Carrier (professional) claim costs that have a BETOS code on the claim indicating they are some type of E&M service are included in category 1). CMS assigns each Health Care Procedure Coding System (HCPCS) code to a BETOS code. For example, BETOS code M1A (office visits – new) consists of the following E&M HCPCS codes: 99201, 99202, 99203, 99204, 99205, 99381, 99382, 99383, 99384, 99385, 99386, 99387, 99432, 0500F, G0101, G0245, G0248, G0344; BETOS code P1B (major procedure - colectomy) consists of the following procedure HCPCS codes: 44139, 44140, 44141, 44143, 44144, 44145, 44146, 44147, 44150, 44151, 44152, 44153, 44155, 44156, 44160.

CMS developed the BETOS coding system primarily for analyzing the growth in Medicare expenditures. The coding system covers all HCPCS codes; assigns a HCPCS code to only one BETOS code; consists of readily understood clinical categories (as opposed to statistical or financial categories); consists of categories that permit objective assignment; is stable over time; and is relatively immune to minor changes in technology or practice patterns. BETOS code descriptions are listed in Table F.2. on the following page.

Table F.2. 2010 BETOS Codes and Descriptions

(1) Evaluation and Management	
M1A	= Office visits - new
M1B	= Office visits - established
M2A	= Hospital visit - initial
M2B	= Hospital visit - subsequent
M2C	= Hospital visit - critical care
M3	= Emergency room visit
M4A	= Home visit
M4B	= Nursing home visit
M5A	= Specialist - pathology (HCPCS moved to T1G in 2003)
M5B	= Specialist - psychiatry
M5C	= Specialist - ophthalmology
M5D	= Specialist - other
M6	= Consultations

Table F.2. 2010 BETOS Codes and Descriptions (2)Procedures

P0	=	Anesthesia
P1A	=	Major procedure - breast
P1B	=	Major procedure - colectomy
P1C	=	Major procedure - cholecystectomy
P1D	=	Major procedure - turp
P1E	=	Major procedure - hysterectomy
P1F	=	Major procedure - explor/decompr/excis disc
P1G	=	Major procedure - other
P2A	=	Major procedure, cardiovascular - CABG
P2B	=	Major procedure, cardiovascular - aneurysm repair
P2C	=	Major Procedure, cardiovascular - thromboendarterectomy
P2D	=	Major procedure, cardiovascular - coronary angioplasty (PTCA)
P2E	=	Major procedure, cardiovascular - pacemaker insertion
P2F	=	Major procedure, cardiovascular - other
P3A	=	Major procedure, orthopedic - hip fracture repair
P3B	=	Major procedure, orthopedic - hip replacement
P3C	=	Major procedure, orthopedic - knee replacement
P3D	=	Major procedure, orthopedic - other
P4A	=	Eye procedure - corneal transplant
P4B	=	Eye procedure - cataract removal/lens insertion
P4C	=	Eye procedure - retinal detachment
P4D	=	Eye procedure - treatment of retinal lesions
P4E	=	Eye procedure - other
P5A	=	Ambulatory procedures - skin
P5B	=	Ambulatory procedures - musculoskeletal
P5C	=	Ambulatory procedures - groin hernia repair
P5D	=	Ambulatory procedures - lithotripsy
P5E	=	Ambulatory procedures - other
P6A	=	Minor procedures - skin
P6B	=	Minor procedures - musculoskeletal
P6C	=	Minor procedures - other (Medicare fee schedule)
P6D	=	Minor procedures - other (non-Medicare fee schedule)
P7A	=	Oncology - radiation therapy
P7B	=	Oncology - other
P8A	=	Endoscopy - arthroscopy
P8B	=	Endoscopy - upper gastrointestinal
P8C	=	Endoscopy - sigmoidoscopy
P8D	=	Endoscopy - colonoscopy
P8E	=	Endoscopy - cystoscopy
P8F	=	Endoscopy - bronchoscopy
P8G	=	Endoscopy - laparoscopic cholecystectomy
P8H	=	Endoscopy - laryngoscopy
P8I	=	Endoscopy - other
P9A	=	Dialysis services (Medicare Fee Schedule)
P9B	=	Dialysis services (non-Medicare fee schedule)

(Table F.2. 2010 BETOS Codes and Descriptions 3) Imaging

I1A	=	Standard imaging - chest
I1B	=	Standard imaging - musculoskeletal
I1C	=	Standard imaging - breast
I1D	=	Standard imaging - contrast gastrointestinal
I1E	=	Standard imaging - nuclear medicine
I1F	=	Standard imaging - other
I2A	=	Advanced imaging - CAT/CT/CTA: brain/head/neck
I2B	=	Advanced imaging - CAT/CT/CTA: other
I2C	=	Advanced imaging - MRI/MRA: brain/head/neck
I2D	=	Advanced imaging - MRI/MRA: other
I3A	=	Echography/ultrasonography - eye
I3B	=	Echography/ultrasonography - abdomen/pelvis
I3C	=	Echography/ultrasonography - heart
I3D	=	Echography/ultrasonography - carotid arteries
I3E	=	Echography/ultrasonography - prostate, transrectal
I3F	=	Echography/ultrasonography - other
I4A	=	Imaging/procedure - heart including cardiac catheter
I4B	=	Imaging/procedure – other

Table F.2. 2010 BETOS Codes and Descriptions (4)		Tests
T1A	=	Lab tests - routine venipuncture (non-Medicare fee schedule)
T1B	=	Lab tests - automated general profiles
T1C	=	Lab tests - urinalysis
T1D	=	Lab tests - blood counts
T1E	=	Lab tests - glucose
T1F	=	Lab tests - bacterial cultures
T1G	=	Lab tests - other (Medicare fee schedule)
T1H	=	Lab tests - other (non-Medicare fee schedule)
T2A	=	Other tests - electrocardiograms
T2B	=	Other tests - cardiovascular stress tests
T2C	=	Other tests - EKG monitoring
T2D	=	Other tests – other
(5) Durable Medical Equipment		
D1A	=	Medical/surgical supplies
D1B	=	Hospital beds
D1C	=	Oxygen and supplies
D1D	=	Wheelchairs
D1E	=	Other DME
D1F	=	Prosthetic/orthotic devices
D1G	=	Drugs administered through DME
(6) Other		
O1A	=	Ambulance
O1B	=	Chiropractic
O1C	=	Enteral and parenteral
O1D	=	Chemotherapy
O1E	=	Other drugs
O1F	=	Hearing and speech services
O1G	=	Immunizations/vaccinations
(7) Exceptions/Unclassified		
Y1	=	Other - Medicare fee schedule
Y2	=	Other - non-Medicare fee schedule
Z1	=	Local codes
Z2	=	Undefined codes

Note: For a crosswalk of HCPCS codes to BETOS codes, see www.cms.gov/HCPCSReleaseCodeSets/20_BETOS.asp.

Source: Centers for Medicare & Medicaid Services Health Care Common Procedure Coding System, 2010

APPENDIX G

PHYSICIAN 2010 QRUR ELIGIBILITY CATEGORIES

CMS Specialty Code/Provider Specialty	Designated as a Doctor of Medicine or Doctor of Osteopathic Medicine: Eligible for Attribution (Yes/No)
01 = General practice	Yes
02 = General surgery	Yes
03 = Allergy/immunology	Yes
04 = Otolaryngology	Yes
05 = Anesthesiology	Yes
06 = Cardiology	Yes
07 = Dermatology	Yes
08 = Family practice	Yes
09 = Interventional Pain Management	Yes
10 = Gastroenterology	Yes
11 = Internal medicine	Yes
12 = Osteopathic manipulative therapy	Yes
13 = Neurology	Yes
14 = Neurosurgery	Yes
15 = Speech Language Pathologists	No
16 = Obstetrics/gynecology	Yes
17 = Hospice and Palliative Care	Yes
18 = Ophthalmology	Yes
19 = Oral surgery (dentists only)	No
20 = Orthopedic surgery	Yes
21 = Unassigned	No
22 = Pathology	Yes
23 = Unassigned	No
24 = Plastic and reconstructive surgery	Yes
25 = Physical medicine and rehabilitation	Yes
26 = Psychiatry	Yes
27 = Geriatric Psychiatry	Yes
28 = Colorectal surgery (formerly proctology)	Yes
29 = Pulmonary disease	Yes
30 = Diagnostic radiology	Yes
31 = Intensive Cardiac Rehabilitation	Yes
32 = Anesthesiologist assistant	No
33 = Thoracic surgery	Yes
34 = Urology	Yes
35 = Chiropractor, licensed	No
36 = Nuclear medicine	Yes
37 = Pediatric medicine	Yes
38 = Geriatric medicine	Yes
39 = Nephrology	Yes
40 = Hand surgery	Yes
41 = Optometrist	No
42 = Certified nurse midwife	No
43 = Certified registered nurse anesthesiologist	No

CMS Specialty Code/Provider Specialty	Designated as a Doctor of Medicine or Doctor of Osteopathic Medicine: Eligible for Attribution (Yes/No)
44 = Infectious disease	Yes
45 = Mammography screening center	No
46 = Endocrinology	Yes
47 = Independent Diagnostic Testing Facility	No
48 = Podiatry	No
49 = Ambulatory surgical center	No
50 = Nurse practitioner	No
51 = Medical supply company with certified orthotist	No
52 = Medical supply company with certified prosthetist	No
53 = Medical supply company with certified prosthetist-orthotist	No
54 = Medical supply company for DMERC	No
55 = Individual certified orthotist	No
56 = Individual certified prosthetist	No
57 = Individual certified prosthetist-orthotist	No
58 = Medical supply company with registered pharmacist	No
59 = Ambulance service supplier, e.g., private ambulance companies, funeral homes, etc.	No
60 = Public health or welfare agencies (federal, state, and local)	No
61 = Voluntary health or charitable agencies (e.g., National Cancer Society, National Heart Association, Catholic Charities)	No
62 = Psychologist (billing independently)	No
63 = Portable X-ray supplier	No
64 = Audiologist (billing independently)	No
65 = Physical therapist (independently practicing)	No
66 = Rheumatology	Yes
67 = Occupational therapist (independently practicing)	No
68 = Clinical psychologist	No
69 = Clinical laboratory (billing independently)	No
70 = Multispecialty clinic or group practice	Yes
71 = Registered dietician/nutrition professional	No
72 = Pain management	Yes
73 = Mass immunization roster billers	No
74 = Radiation therapy centers	No
75 = Slide preparation facilities	No
76 = Peripheral vascular disease	Yes
77 = Vascular surgery	Yes
78 = Cardiac surgery	Yes
79 = Addiction medicine	Yes
80 = Licensed clinical social worker	No
81 = Critical care (intensivists)	Yes
82 = Hematology	Yes
83 = Hematology/oncology	Yes
84 = Preventive medicine	Yes
85 = Maxillofacial surgery	Yes
86 = Neuropsychiatry	Yes
87 = All other suppliers (e.g. drug and department stores)	No
88 = Unknown supplier/provider	No

CMS Specialty Code/Provider Specialty	Designated as a Doctor of Medicine or Doctor of Osteopathic Medicine: Eligible for Attribution (Yes/No)
89 = Certified clinical nurse specialist	No
90 = Medical oncology	Yes
91 = Surgical oncology	Yes
92 = Radiation oncology	Yes
93 = Emergency medicine	Yes
94 = Interventional radiology	Yes
95 = Unassigned	No
96 = Optician	No
97 = Physician assistant	No
98 = Gynecologist/oncologist	Yes
99 = Unknown physician	Yes
A0 = Hospital	No
A1 = SNF	No
A2 = Intermediate care nursing facility (DMERCs only)	No
A3 = Nursing facility, other (DMERCs only)	No
A4 = HHA (DMERCs only)	No
A5 = Pharmacy (DMERCs only)	No
A6 = Medical supply company with respiratory therapist (DMERCs only)	No
A7 = Department store (for DMERC use)	No
A8 = Grocery store (for DMERC use)	No

Source: Medicare Claims Processing Manual, Chapter 26 - Completing and Processing Form CMS-1500 Data Set, (Rev. 2126, 12-23-10), 10.8.2 - Physician Specialty Codes, (Rev. 2035, Issued: 08-27-10, Effective: 01-01-11, Implementation: 01-03-11), 10.8.3 - Nonphysician Practitioner, Supplier, and Provider Specialty Codes, (Rev. 2030, Issued: 08-20-10, Effective: 01-01-11, Implementation: 01-03-11—VMS to do Analysis and Design, 04-04-11—Final Implementation).

APPENDIX H

LIST OF ACRONYMS

APC	Ambulatory Payment Classification
ASC	Ambulatory Surgical Center
BETOS	Berenson-Eggers Type of Service
CAH	Critical Access Hospital
CMS	Centers for Medicare & Medicaid Services
COLA	Cost-of-Living Adjustment
COPD	Chronic Obstructive Pulmonary Disease
DME	Durable Medical Equipment
DRG	Diagnosis-Related Group
DSH	Disproportionate-Share Hospital
E&M	Evaluation and Management
ER	Emergency Room
ESRD	End-Stage Renal Disease
FFS	[Medicare] Fee-For-Service
GAF	Geographic Adjustment Factor
GPCIs	Geographic Practice Cost Indices
HCC	Hierarchical Condition Category
HCFA	Health Care Financing Administration
HCPCS	Healthcare Common Procedure Coding System
IME	Indirect Medical Education
LTC	Long-Term Care
MAC	Medicare Administrative Contractor
NLA	National Limitation Amount
NQF	National Quality Forum
OPPS	Outpatient Prospective Payment System
PECOS	Provider Enrollment, Chain, and Ownership System
PFS	Physician Fee Schedule
PLI	Professional Liability Insurance
PPS	Prospective Payment System
QRUR	Quality and Resource Use Report
RVU	Relative Value Unit
SNF	Skilled Nursing Facility
VBM	Value-Based Payment Modifier
VBP	Value-Based Purchasing