DETAILED METHODOLOGY FOR THE 2012 QUALITY AND RESOURCE USE REPORTS

I. OVERVIEW

A. What Are the 2012 Quality and Resource Use Reports?

The 2012 Quality Use and Resource Reports (QRURs) are confidential feedback reports provided to all groups of physicians nationwide that include 25 or more eligible professionals[1] who billed for Medicare-covered services under a single Taxpayer Identification Number (TIN) in 2012, and that had at least 20 eligible cases for one or more of the quality or cost measures included in the QRURs. These groups include those that participated in the 2012 Group Practice Reporting Option (GPRO) of the Physician Quality Reporting System (PQRS); the 2012 Medicare Shared Savings Program or Pioneer Accountable Care Organization (ACO) Model (together referred to as ACOs in this document); or the 2012 Comprehensive Primary Care Initiative. The 2012 QRURs contain information on the quality of care provided to Medicare fee-for-service (FFS) beneficiaries whom these groups treated in 2012, as well as the resources used to provide that care. Additionally, for GPRO groups, the reports include the incentive payment earned under the 2012 GPRO program.

These feedback reports have been developed under the Centers for Medicare & Medicaid Services (CMS) Physician Feedback Program. They are integral to CMS' efforts to support value-based purchasing initiatives to enhance the quality and efficiency of health services provided to Medicare beneficiaries. (See the box on the following page for more information.) The 2010 Affordable Care Act 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 provide to Medicare beneficiaries. The 2012 QRURs preview the performance information that will be used next year to compute a VBM for physician groups with 100 or more eligible professionals, based on 2013 data. The VBM will be applied to all Physician Fee Schedule payments for these groups in 2015.

[1] Eligible professionals include physicians, practitioners, physical or occupational therapists or qualified speech-language pathologists, and qualified audiologists. A physician is one of the following: doctor of medicine, doctor of osteopathy, doctor of dental surgery or dental medicine, doctor of podiatric medicine, doctor of optometry, or chiropractor. A practitioner is any of the following: certified registered nurse anesthetist, anesthesiology assistant, certified nurse midwife, clinical social worker, clinical psychologist, nurse practitioner, physician assistant, or registered dietician or nutrition professional. The term "eligible professionals" does not include health care suppliers such as orthotists/prosthetists, opticians, independent diagnostic testing or screening centers, or independent clinical laboratories. See Appendix Table G.1 to view the list of providers designated as eligible professionals by CMS based on its two-digit CMS specialty code.

The Physician Feedback Program and the Value-Based Payment Modifier

To enhance the quality and efficiency of health care services provided to Medicare beneficiaries, CMS is developing and implementing a set of value-based purchasing 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 value-based purchasing initiatives, for the past several years under the Physician Feedback Program, CMS has disseminated a limited number of confidential reports to physicians and groups of physicians that include measures of resource use and quality. CMS has pursued a phased approach to implementing physician feedback reporting as a way to expand understanding of policy issues related to measuring physician-driven costs of care and quality. In the earliest phase of the program (in 2009), CMS tested approximately 300 reports with physicians and physician groups 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 subsequent phases, CMS distributed reports that contained information on both the quality and the cost of care to growing numbers of physicians and groups of physicians. In 2012, reports were provided to all groups of physicians participating in the 2011 PQRS GPRO I program, and also to the approximately 95,000 physicians who practiced in one of nine states (California, Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, or Wisconsin) in 2011 and submitted Medicare FFS claims as part of a group of physicians (as identified by Taxpayer Identification Number) with 25 or more eligible professionals. In fall 2013, CMS is distributing feedback reports to all groups of physicians nationwide with at least 25 eligible professionals. CMS will continue to refine the design, content, and underlying methodology of the physician feedback reports as it incorporates new measures and more detailed data.

The Physician Feedback Program also supports the Affordable Care Act's VBM program, which will be phased in over a two-year period beginning in 2015, with an initial performance period of 2013. In 2015, Medicare will apply the VBM to nearly all groups of physicians with 100 or more eligible professionals based on their participation in the PQRS during 2013. (The VBM will not be initially applied to groups participating in the Medicare Shared Savings Program, the Pioneer Accountable Care Organization Model, or the Comprehensive Primary Care Initiative.) Beginning in 2017, all physicians paid under the Medicare Physician Fee Schedule will be affected by the VBM modifier.

B. What Are the Goals of the 2012 QRURs?

A primary goal of these reports is to support the efforts of physician groups that are working to provide high quality care to their Medicare FFS patients in an efficient manner. The reports are designed to complement existing quality improvement initiatives by providing meaningful information on the quality of care received by the groups' Medicare beneficiaries and the costs associated with delivering that care. The reports also indicate how these groups are performing relative to their peers. Another goal is to illustrate how quality-of-care and resource use information will be used in future VBM calculations.

C. What Information is Included in the 2012 QRURs?

Each group's QRUR has detailed information on the beneficiaries for whom the group provided a plurality of primary care services during 2012 (QRUR Exhibits 1 and 2 and Drill Down Table 1), along with measures of the quality of care received by these beneficiaries and the resource use associated with delivering that care (QRUR Exhibits 4 and 7-10, respectively). As well, the QRUR includes benchmarks that indicate how well the group performed on these measures relative to their peers (QRUR Exhibits 4 and 7).[2] The report also includes information on the hospitals treating these beneficiaries and lists the primary diagnoses and discharge status for most of their hospital stays (shown in QRUR Exhibit 5 and Drill Down Table 3). From this information, CMS computes the quality and cost composite measure scores that determine that group's VBM and displays the scores in the 2012 QRURs (QRUR Exhibits 3 and 6, respectively). (The computation of these composite scores is described in the 2013 Medicare Physician Fee Schedule Final Rule,[3] as well as in Section III of this document.) The report also displays the VBM quality and cost category to which a group would be assigned based on its 2012 performance under the quality tiering approach (described below in Section III and detailed on the QRUR Performance Highlights page).

A group's quality composite score summarizes its performance on up to six equally-weighted quality domains: Clinical Process/Effectiveness, Patient and Family Engagement, Population/Public Health, Patient Safety, Care Coordination, and Efficient Use of Healthcare Resources. The quality scores reported in the QRUR reflect how much a group's performance differs from the national mean performance on a measure-by-measure basis within each quality domain. For groups of physicians that have satisfactorily reported data to the 2012 PQRS via the GPRO web-based interface, the group's quality composite score reflects performance on a subset of the PQRS quality measures they reported (Exhibit IV.1). For groups that participated in an ACO, the quality composite score reflects performance on a subset of quality measures reported to ACO programs in 2012 (Exhibit IV.2). For all other groups, the quality composite score reflects performance on a set of 14 administrative claims-based quality measures (derived from FFS Medicare claims submitted for Medicare beneficiaries attributed to the group in 2012) (Exhibit IV.3). In addition, the quality measure scores for all groups incorporate performance on three outcome measures that CMS calculates from FFS claims: two composite measures of

[2] For GPRO groups, the reports also include information about any incentive earned under the PQRS program.

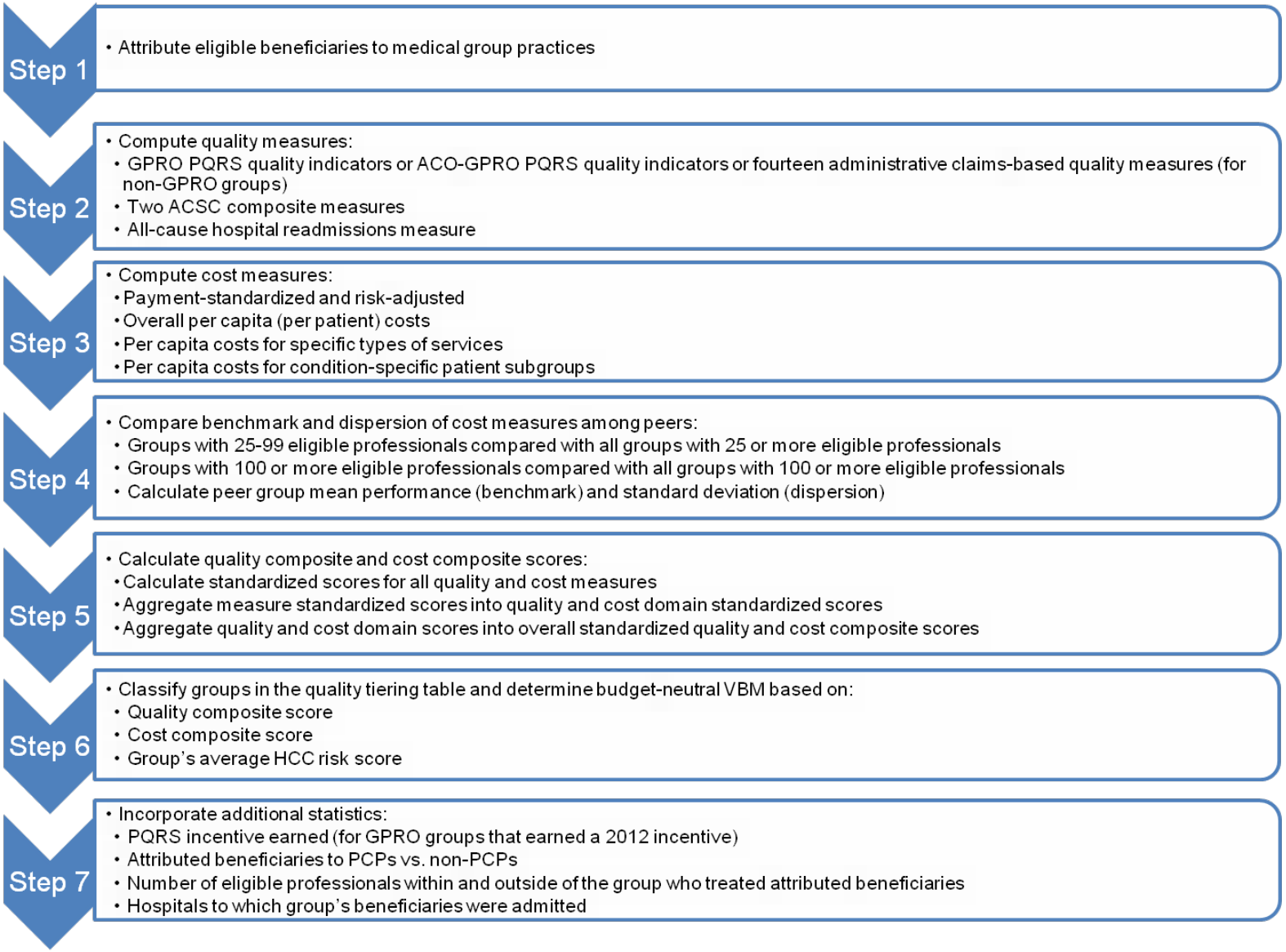
[3] See http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/. Accessed September 5, 2013.

hospital admissions for acute and chronic ambulatory care sensitive conditions (ACSCs) and one measure of all-cause hospital readmissions.

To assess resource use, a group's cost composite score summarizes its performance on up to two equally-weighted cost domains: total per capita (per patient) costs for all attributed beneficiaries and per capita costs for attributed beneficiaries with specific conditions, namely, diabetes, coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), and heart failure. The cost measures reported in the QRUR reflect how much a group's performance differs from the national mean performance on a measure-by-measure basis within each cost domain. Beneficiary costs, as identified by allowed charges in Medicare claims, are standardized to remove geographic Medicare payment differences (described in Section V.B. and Appendix C) and then risk adjusted (described in Section V.C. and Appendix D) prior to the calculation of total per capita costs and specific-chronic conditions per capita costs.

Exhibit I.1 below provides a summary of the steps involved in assessing the performance of physician groups on quality and resource use measures. Appendix A includes a detailed description of the data used to compute the statistics included in the report.

Exhibit I.1. Pathway from Beneficiary Attribution to Performance Assessment, PY2012 QRURs



D. How Do the 2012 QRURs Differ from the 2011 Group-Level QRURs?

In response to stakeholder feedback, and as part of a continuing effort to enhance the usefulness and expand the comprehensiveness of the QRURs, CMS has incorporated the following changes in this year's reports:

1. **Expand the number of groups of physicians receiving reports.** CMS expanded the number of groups of physicians eligible to receive a QRUR to all groups nationwide meeting two criteria: (a) at least 25 eligible professionals billed under the group's TIN in 2012, and (b) the group had at least 20 eligible cases for at least one of the quality or cost measures included in the QRUR. The 2011 group QRURs were provided only to those groups that participated in the Physician Quality Reporting Systems (PQRS) Group Practice Reporting Option (GPRO), which required participating groups to submit information related to a set of primary and preventive care quality measures.
2. **Include a preview of how the group might score on the quality and cost composite measures that will be used for the value-based payment modifier.** The 2012 QRURs display each report recipient's quality and cost composite measure score based on 2012 data, as well as scores for the cost and quality domains that constitute the composites. The report also displays how the group's scores compare with their peers' performance. This information allows groups of physicians to see how they might fare under the value-based payment modifier that will be applied in 2015, based on a computation of these same composite measures using 2013 data. Additional information is available at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/ValueBasedPaymentModifier.html.
3. **Provide detailed data on each group's attributed beneficiaries and their hospitalizations, and the group's associated eligible professionals.** Complementing the 2012 QRURs are three Drill Down tables that provide information on each beneficiary attributed to the group and each eligible professional billing under the group's Taxpayer Identification Number (TIN).
    a. Beneficiaries (Drill Down Table 1): beneficiary identifying information (such as health insurance claim number and date of birth), number and percentage of primary care services billed by the group, the specific service categories in which the beneficiary incurred expenditures in 2012, and whether the beneficiary had certain chronic conditions (diabetes, for example).
    b. Hospitalizations (Drill Down Table 3): beneficiary identifying information, admission date, admitting hospital, principal diagnosis, discharge date, readmission information, information on whether admission was potentially preventable, discharge date, and discharge location.
    c. Eligible Professionals (Drill Down Table 2): each eligible professional, identified by National Provider Identifier (NPI), billing under the group's TIN in 2012, the professional's specialty, and an indication of whether the professional is a physician or a non-physician practitioner.
4. **Employ a new attribution rule.** The QRURs use the same two-step attribution rule used to attribute beneficiaries to Accountable Care Organizations (ACOs) in the Medicare Shared Savings Program. Under this rule, a beneficiary receiving primary

care services from one or more primary care physicians is attributed to the group whose primary care physicians provided more primary care services (as measured by allowed charges) than any other group. Otherwise, the beneficiary is attributed to the group whose other physicians, clinical nurse specialists, nurse practitioners, and physician assistants provided the most primary care services, as long as at least one physician in the group provided such services to the beneficiary.

5. **Include part-year and other beneficiaries in the attribution rule.** Unlike the 2011 QRURs, the following types of beneficiaries are eligible for attribution to a group of physicians: those who died, were newly enrolled in Medicare, were enrolled in a Medicare FFS demonstration, used hospice benefits, had Medicare coverage through the Railroad Retirement Board, or received any Medicare-covered services for which Medicare was not the primary payer. Even if these beneficiaries are attributed to a group of physicians, however, they may still be excluded from specific performance measures if the measure's specification requires their exclusion.

6. **Include CMS-calculated administrative claims-based quality indicators for groups of physicians not participating in the PQRS GPRO or in an ACO.** For groups that did not participate in the GPRO program or in an ACO in 2012, the 2012 QRURs report performance on 14 administrative claims-based quality measures covering aspects of the following areas of treatment: bone, joint, and muscle disorders; COPD; diabetes mellitus; ischemic vascular disease; mental health; medication management; and preventive care. (These indicators previously were reported in the 2011 QRURs for Individual Physicians but not in the 2011 Group QRURs.)

7. **Adjust the three outcome measures for age and gender.** The QRURs report performance rates on three outcome measures and, in the 2012 QRURs, these rates are risk adjusted. For the chronic and acute Ambulatory Care Sensitive Condition (ACSC) measures, the risk adjustment accounts for differences in the age and gender of beneficiaries attributed to different groups. The all-cause hospital readmissions measure is also risk adjusted to account for differences in beneficiaries' demographic and health status.

8. **Use prior-year data to benchmark quality measures.** The 2012 QRURs include benchmarks for each quality measure based on the mean performance of physician groups and individual physicians reporting the measure *in the year prior to the performance year* (2011) rather than in the performance year itself (if a comparable prior year measure is available); cost benchmarks continue to be based on current year (2012) performance.

9. **Provide data for additional categories of service.** The 2012 QRURs continue to report per capita costs for evaluation and management (E&M) services by type of provider. Moreover, they additionally distinguish E&M services provided by the report recipient's group versus all other groups. In addition, the All Other Services category now breaks out three separate subcategories: Ambulance Services, Chemotherapy and Other Part B–Covered Drugs, and All Other Services Not Otherwise Classified.

II. HOW ARE MEDICARE BENEFICIARIES ATTRIBUTED TO GROUPS OF PHYSICIANS?

A. Attribution

Medicare beneficiaries are considered for assignment to a group of physicians, as identified by TIN, in a two-step process based on total allowed charges billed for primary care services (see Exhibit II.1 below) by the group, as captured in 2012 Part B Medicare claims.

1. The first step assigns a beneficiary to a group if the beneficiary receives the plurality (as measured by allowed charges) of his or her primary care services from primary care physicians within the group. Primary care physicians are those with one of four specialty designations: Family Practice, General Practice, Geriatric Medicine, or Internal Medicine.
2. The second step applies only to beneficiaries who did not receive a primary care service from any primary care physician in 2012. Under this second step, a beneficiary is assigned to a group if the beneficiary (a) received at least one primary care service from a physician within the group and (b) received a plurality of his or her primary care services from specialist physicians and certain non-physician practitioners (nurse practitioners, clinical nurse specialists, and physician assistants) within the group.

The same population of beneficiaries attributed to a group of physicians is used for calculating the denominators of all non-PQRS quality and cost measures displayed in this report. However, for GPRO reporting, CMS based the performance on any displayed GPRO quality indicators on a sample of beneficiaries who had at least two office or other outpatient visits with the group and for whom the group provided the plurality of all office and other outpatient services during approximately the first 10 months of 2012; Medicare Advantage enrollees and beneficiaries for whom Medicare was not the primary payer for all of 2012 are excluded.

Exhibit II.1. Healthcare Common Procedure Coding System (HCPCS) Primary Care Service Codes

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

Note: Labels are approximate. See the American Medical Association's Current Procedural Terminology and the CMS website (http://www.cms.gov) for detailed definitions.

People eligible for Medicare due to age (65 or older), end-stage renal disease (ESRD), or a qualifying disability are potentially eligible for inclusion in all quality and resource use claims-based measures if none of the global exclusions listed below applied to them. Each attributed beneficiary is included in the computation of each performance measure for which the beneficiary meets the measure's specific eligibility criteria.

B. Which Beneficiaries and Claims Are Excluded from the QRUR?

Beneficiaries were not attributed to any group of physicians if any of the following situations applied to them:

- They were enrolled in Medicare Part A only or Part B only for any month in 2012.
- They were not enrolled in both Medicare Part A and Part B for at least one month in 2012.
- They were enrolled in Medicare managed care (a Medicare Advantage plan) for any month in 2012.
- They resided outside of the United States, its territories, and its possessions for any month in 2012.
- They did not have any Medicare allowed charges in 2012.

Note that, as a change from the PY2011 QRURs, the following types of beneficiaries are *included* in all quality and resource use measures if they are not otherwise excluded by the criteria above or by a particular measure's specifications: those who died or were otherwise enrolled in both Parts A and B during only part of the year, were newly enrolled in Medicare, were enrolled in a Medicare FFS demonstration, used hospice benefits, had Medicare coverage through the Railroad Retirement Board, or received any Medicare-covered services for which Medicare was not the primary payer in 2012.4

Certain types of *claims* are excluded from the computation of quality and cost claims-based measures, but the *beneficiaries* with such claims nonetheless are retained. Specifically, claims with payments that are zero, negative, missing, or very low[5] are excluded. Also, where claims for inpatient hospital encounters appear in the FFS data but the beneficiary was not otherwise identified as having been enrolled in Medicare managed care for any part of the year, those claims are excluded from the sample but the beneficiary and the beneficiary's remaining claims are not excluded.

[4] Additional details on exclusions are in Appendix B.

[5] Claims with standardized allowed amounts under 50 cents were excluded. In many cases, these represent claims that provide clinical information—such as a quality-data code for a PQRS measure—for which nominal amounts must be included because the provider's billing software cannot accommodate a charge of $0.00.

III. WHAT IS THE VALUE-BASED PAYMENT MODIFIER AND HOW IS IT CALCULATED?

The value-based payment modifier (VBM) is an adjustment to payments under the Medicare Physician Fee Schedule that will reward higher quality care delivered at lower resource use, as required under Section 3007 of the Affordable Care Act. As described in the 2013 Physician Fee Schedule Notice of Final Rulemaking, CMS initially will apply the VBM only to physicians practicing in groups, as identified by TIN, with 100 or more eligible professionals—as identified by the Medicare Provider Enrollment, Chain, and Ownership System (PECOS) as of October 15, 2013—as long as at least 100 eligible professionals actually billed Medicare under that group's TIN during 2013. CMS will separate these groups into two categories, based on their registration and participation in the PQRS in 2013. Groups may participate under one of three PQRS reporting options: (1) the GPRO web interface, (2) a qualified registry, or (3) CMS-calculated administrative claims. Groups choosing not to register and participate in PQRS in one of these three ways will have a VBM set at -1.0 percent and applied to all of the group's Medicare Physician Fee Schedule payments in 2015. Groups that register and participate in PQRS via one of the three reporting options will have their VBM set at 0.0 percent, meaning that they will incur no negative adjustment to their 2015 physician fee schedule payments, unless they elect to have CMS calculate their VBM using a quality tiering approach based on their 2013 performance. Those electing the quality tiering approach may have an upward, downward, or no payment adjustment. CMS will not apply the VBM for 2015 and 2016 to groups of physicians participating in the Medicare Shared Savings Program, the Pioneer ACO Model, or the Comprehensive Primary Care Initiative.

The VBM is derived from a quality composite score and a cost composite score. The quality composite score (shown in QRUR Exhibit 3) summarizes a group's performance on quality care for Medicare beneficiaries for up to six equally-weighted quality domains: Clinical Process/Effectiveness, Patient and Family Engagement, Population/Public Health, Patient Safety, Care Coordination, and Efficient Use of Healthcare Resources.[6] Section IV of this document provides measure set descriptions and presents the measures included within each quality domain for each type of group (GPRO, ACO, or other). The cost composite score (show in QRUR Exhibit 6) summarizes a group's performance regarding resource use for their attributed Medicare beneficiaries across two equally-weighted cost domains: Per Capita Costs for All Attributed Beneficiaries and Per Capita Costs for Beneficiaries with Specific Conditions (diabetes, CAD, COPD, and heart failure). These measures are further described in Section V of this document.

A. Method for Calculating the Quality Composite Score for the VBM

The quality composite score is calculated by first standardizing performance on each quality measure, then averaging standardized scores within domains to obtain domain-level scores, and finally averaging the domain scores to obtain the quality composite score.

[6] For the 2012 quality composites, there are no measures in the last domain.

Measure-level performance is standardized by subtracting from a group's performance rate the mean performance rate on the same measure in the prior year (benchmark), calculated for the relevant peer group. The result is then divided by the standard deviation of the measure's performance across the peer group to produce a score that measures the group's performance in terms of the number of standard deviations from the peer group mean.[7]

A group's peer group depends on whether it is a GPRO group, an ACO participant, or neither. For GPRO groups and ACO participants, the peer group for the PQRS quality measures is defined as all PQRS participants nationwide (including those participating either as individual physicians or as a physician group) who reported the measure for at least 20 eligible cases in the prior year (2011), if a comparable 2011 measure is available.[8,9] The comparability of measures across years and PQRS submission mechanisms is determined through a multiple-step process. First, measures that were added as new measures in 2012 will have no comparable 2011 measure. Second, a 2012 PQRS GPRO measure also used in 2011 is considered comparable to its corresponding 2011 PQRS GPRO measure if the 2012 PQRS GPRO Narrative Specification Release Notes[10] identify no substantive changes to the measure from 2011 to 2012. Subject to CMS review, all changes other than an update to the clinical recommendations or measure owner are considered substantive. In determining comparability between 2012 and 2011 measures for which the 2012 PQRS GPRO Narrative Specification Release Notes record a change, narrative measure specifications for 2012 and 2011 are compared to identify notable differences between the measures, including changes to numerators, denominators, and exclusions. A similar approach, using the appropriate narrative specifications, is used to identify differences between 2012 PQRS GPRO measures and individually-reported 2011 Claims/Registry and electronic health record (EHR) measures, and between 2012 ACO-GPRO and 2011 PQRS GPRO and/or individually-reported 2011 Claims/Registry and EHR measures. On the basis of observed specification differences, a decision is made, with CMS input, about measure comparability and its usefulness as a prior-year benchmark.

For all non-PQRS quality measures displayed in the report—all administrative claims–based quality measures, the two ACSC composite measures, and the all-cause readmissions measure—performance on the measure in 2012 for all groups with at least 25 but fewer than 100 eligible professionals (regardless of their GPRO or ACO status) is compared to the mean performance on the measure in the prior year, 2011, of all groups nationwide with at least 25 eligible professionals (including groups with 100 or more eligible professionals) and at least 20 eligible cases for the measure. For groups with at least 100 eligible professionals, 2012 performance is compared to prior year 2011 mean performance on the measure of all groups nationwide with at

[7] The standard deviation is computed as the average (among the peer group) squared deviation from the *performance year* mean.

[8] By including eligible professionals who participated in PQRS as individuals, these means are more representative of the experience of PQRS participants generally.

[9] If a comparable 2011 measure is not available, the group's current year performance on the quality measure is displayed in the QRUR but no prior-year benchmark based on 2011 data is displayed.

[10] See **http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Downloads/2012_PhysQualRptg_GPRO_Measures_List_Specs_Release_Notes12152011.zip**. Accessed September 5, 2013.

least 100 eligible professionals and at least 20 eligible cases for the measure. Mean peer group performance rates and standard deviations are both weighted, with each peer group member receiving a weight equal to the group's number of eligible cases for the specific measure (for example, number of attributed beneficiaries with a specific health condition or number of hospitalizations for specific beneficiaries).

Quality domain-level scores (shown in QRUR Exhibit 3) are calculated as the simple (equally-weighted) average of a group's non-missing standardized measure scores within the domain, if the group has a score for at least one measure included in the quality domain. Only measures with at least 20 eligible cases are included in the quality domain-level scores. Finally, the overall quality composite score is calculated as the simple (equally-weighted) average of all of a group's non-missing domain scores, if the group has a score for at least one domain included in the overall quality composite. To generate a distribution of quality composite scores centered at zero and with a standard deviation of one, each group's overall quality composite score is standardized by subtracting the peer group's overall quality composite score mean and dividing the difference by the peer group's overall quality composite score standard deviation.

B. Method for Calculating the Cost Composite Score for the VBM

Like quality measures, a group's performance on each resource use measure is compared to that of its peers. For each of these measures, performance in the current year, 2012, for all groups of physicians with at least 25 but fewer than 100 eligible professionals is compared to the weighted mean performance in the current year, 2012, of all groups nationwide with at least 25 eligible professionals (including groups with 100 or more eligible professionals) and at least 20 eligible cases For all groups with at least 100 eligible professionals, current year 2012 performance is compared to current year 2012 weighted mean performance on the measure of all groups nationwide with at least 100 eligible professionals and at least 20 cases.

Cost domain-level scores (shown in QRUR Exhibit 6) are calculated as the simple (equally-weighted) average of all of a group's non-missing standardized measure scores within the domain, if the group has a score for at least one measure included in the cost domain. Only measures with at least 20 eligible beneficiaries are included in the cost domain-level scores. Finally, the overall cost composite score is calculated as the simple (equally-weighted) average of all of a group's non-missing domain scores, if the group has a score for at least one domain included in the overall cost composite. For groups attributed fewer than 20 beneficiaries with diabetes, CAD, COPD, and heart failure, the overall cost composite score is based solely on total per capita costs for all attributed beneficiaries. As with the overall quality composite score, each group's overall cost composite score is standardized by subtracting the peer group overall cost composite score mean and dividing the difference by the peer group overall cost composite score standard deviation.

C. Description of the Quality Tiering Approach

Groups of physicians participating in PQRS have the option of having their 2015 VBM calculated using a quality tiering approach based on their 2013 quality and cost performance. Groups electing this option may earn an upward payment adjustment for strong performance on the quality and cost measures but also will be at risk for a downward payment adjustment for poor performance. To be considered either a high or low performer relative to its peers on the quality composite measure, a qualifying group's score must be at least one standard deviation

above or below the national mean quality composite score and be statistically different from the mean score at the 5 percent level of significance. High and low performance is determined similarly for the cost composite measure with the difference that higher cost composite scores are associated with poorer, rather than stronger, performance.

For the purposes of distinguishing high, low, and average performance, the peer group for groups of physicians with at least 100 eligible professionals is all groups of physicians with at least 100 eligible professionals and for which the composite score is calculated. The peer group for groups of physicians with at least 25 eligible professionals but fewer than 100 eligible professionals is all groups of physicians with at least 25 eligible professionals (including groups with 100 or more eligible professionals) and for which the composite score is calculated. The separate peer group was defined for groups with 100 or more eligible professionals because this is the peer group to which the VBM will be applied in 2015 based on performance in 2013 and against which each group with 100 or more eligible professionals will be evaluated for the purposes of determining the payment adjustment for each physician billing under the group's TIN.

If a group's score is not statistically different from the mean score but falls outside one standard deviation of the mean, the group will not be included in the quality tiering table (due to insufficient data for determining their quality or composite score cell). Groups categorized as "average" prior to the statistical significance test will be placed into the "average" cell whether or not the group's score is statistically different from the mean.

Statistical significance is assessed using a two-tailed z-test. The following assumptions were made for computing the test statistic for the quality composite score: (1) standard deviations of peer-group measure performance, population, and expected rates for the ACSC composite measures and prior year benchmarks are non-stochastic; (2) PQRS performance rates are uncorrelated with performance on other measures; and (3) the all-cause hospital readmission measure is measured without error. The second assumption is due to a lack of beneficiary-level data necessary to compute sample covariances; the third assumption is due to computing limitations for the 2012 QRUR reports, which will be investigated in more detail for next year's reports. The test statistic for the cost composite score assumes that the costs for different beneficiaries are independent, but allows for covariance among the total per capita cost and chronic condition-specific per capita costs for any given beneficiary.

The basic structure of the VBM under the quality tiering option is displayed below (Exhibit III.1) and in a similar table in the 2012 QRUR (on the Performance Highlights page). Because the modifier must be budget neutral, the precise size of the reward for higher performing groups—those that are at least average on both quality and cost, and better than average on at least one—will depend on the projected billings of these groups relative to lower performing groups (as captured in the table by the variable "x"). This will vary from year to year with differences in actuarial estimates and the number and relative performance of groups of physicians electing the quality tiering option. Higher performing groups treating beneficiaries with an average risk exceeding the risk of the 75th percentile beneficiary in the Medicare population (that is, those groups with particularly high-risk beneficiaries on average) receive an additional 1.0 percent incentive payment on top of the standard upward adjustment.

Exhibit III.1. Value-Based Payment Adjustment Based on Quality Tiering

	Low Quality	Average Quality	High Quality
Low Cost	+0.0%	+1.0x%*	+2.0x%*
Average Cost	-0.5%	+0.0%	+1.0x%*
High Cost	-1.0%	-0.5%	+0.0%

Note: x refers to a payment adjustment factor yet to be determined.

* Higher performing groups serving high-risk beneficiaries (based on average HCC risk scores) are eligible for an additional adjustment of +1.0x%.

The same (calendar year) 2011 Hierarchical Condition Category (HCC) risk scores that are calculated by CMS and used to risk adjust the per capita cost measures included in the cost composite measure (see description in Section V below) were used to measure the average risk of each group's attributed beneficiaries. The risk score assigned to each Medicare beneficiary predicts that beneficiary's medical costs in 2012 relative to average (mean) costs among all Medicare FFS beneficiaries nationwide (where a score of 1.0 represents average risk), based on the presence of factors known to affect costs and utilization. The 2011 HCC score distribution, from the lowest beneficiary risk score to the highest beneficiary risk score, as well as percentile thresholds, were determined for all Medicare FFS beneficiaries nationally, and then average risk scores for beneficiaries attributed to QRUR groups were compared to these national percentile thresholds. Groups with average beneficiary risk scores at or above the 75th percentile of all beneficiary risk scores nationwide are eligible for an additional upward payment adjustment in the VBM under the quality tiering approach if they are categorized as low cost–average quality, low cost–high quality, or average cost–high quality.

IV. WHICH QUALITY MEASURES ARE INCLUDED IN THE VBM'S QUALITY COMPOSITE SCORE?

One of three sets of measures of a group's quality of care for Medicare beneficiaries is included in the 2012 quality composite score for the VBM, depending on the program in which the group participated. For GPRO groups, the set includes the PQRS GPRO quality measures reported by these types of groups, two ACSC composite measures, and an all-cause hospital readmission measure. For ACOs, the set includes the ACO GPRO quality measures reported by these types of groups, two ACSC composite measures, and an all-cause hospital readmission measure. For all other groups, the set includes 14 administrative claims-based quality measures, two ACSC composite measures, and an all-cause hospital readmission measure. Each of these quality measure sets are described below.

A. PQRS GPRO Quality Measures

To be eligible to receive a PQRS incentive payment, each group that participated in the 2012 PQRS GPRO program was required to report, through the GPRO web interface, its performance on 29 clinical quality measures endorsed by the National Quality Forum. The measures target high-cost chronic conditions and preventive care and are grouped into seven disease modules: COPD (1 measure), CAD (3 measures), diabetes mellitus (8 measures), heart failure (5 measures), hypertension (1 measure), ischemic vascular disease (IVD) (2 measures), and care coordination/patient safety (2 measures); plus 7 patient care (preventive care) measures.[11] The 2012 QRUR displays the number of cases and performance rate for each of the 29 measures for each GPRO group (shown in QRUR Exhibits 4), as well as the peer group's mean (benchmark) performance and average performance range (the benchmark plus or minus one standard deviation) for each measure with a benchmark available in the prior year 2011.

For each measure module, CMS pre-populated a database with a sample of Medicare beneficiaries attributed to the group of physicians that met the eligibility criteria for those measures. CMS based beneficiary attribution to groups for the PQRS GPRO measures on the beneficiary having at least two office or other outpatient visits with the group and for whom the group provided the plurality of all office and other outpatient services during approximately the first 10 months of 2012. Medicare Advantage enrollees and beneficiaries for whom Medicare was not the primary payer for all of 2012 were excluded from attribution. GPRO groups comprising at least 25 but less than 100 eligible professionals were required to report clinical data based on services furnished during calendar year 2012 for at least the first 218 assigned patients (with an oversample of 327 patients) for each measure. If a particular measure applied to fewer than 218 beneficiaries, the group had to submit clinical data for 100 percent of the assigned patients for that measure. GPRO groups comprising 100 or more eligible professionals were required to report clinical data based on services furnished during calendar year 2012 for at least the first 411 assigned patients (with an oversample of 616 patients) for each measure. If a particular measure applied to fewer than 411 beneficiaries, the group had to submit clinical data

[11] A list of these measures and their specifications can be found in the 2012 Downloads section of CMS' Group Practice Reporting Option web page at https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Group_Practice_Reporting_Option.html. Accessed September 5, 2013.

for 100 percent of the assigned patients for that measure. Note that a sample is used only for these 29 quality indicators. For all other measures included in the QRURs, *all* attributed beneficiaries eligible for a measure are included (that is, not just a sample).

Of these 29 measures, 21 also will be reported by groups participating in the 2013 PQRS GPRO program (plus an additional measure listed in the 2012 QRUR: Screening for Clinical Depression and Follow-up Plan); and 16 were reported in 2011 either through a 2011 individual eligible professional PQRS reporting option (via claims, EHRs, or registries) or the 2011 GPRO web interface.

Because any measure included in the VBM quality composite score requires a 2011 prior year benchmark to calculate the measure's standardized score, 13 of the 16 measures that have a comparable prior year benchmark and will be included in the 2013 PQRS GPRO program were in turn included in the 2012 VBM quality composite scores reported in the 2012 QRURs. Exhibit IV.1 lists the 13 PQRS measures, mapped to quality domains, that are included in the 2012 quality composite score calculation for GPRO groups if the group had at least 20 eligible cases for the measure.

Exhibit IV.1. GPRO PQRS Measures Included in the 2012 Quality Composite Score

Quality Measures	Quality Domain
CAD-2: Lipid Control	Clinical Process/Effectiveness
CAD-7: ACE Inhibitor or ARB Therapy for Patients with CAD and Diabetes and/or LVSD	Clinical Process/Effectiveness
DM-2: Hemoglobin A1c Poor Control in DM (>9.0)	Clinical Process/Effectiveness
DM-3: High Blood Pressure Control in DM	Clinical Process/Effectiveness
DM-5: LDL- C Control in DM	Clinical Process/Effectiveness
HF-6: Beta Blocker Therapy for LVSD	Clinical Process/Effectiveness
HTN-2: Controlling High Blood Pressure	Clinical Process/Effectiveness
IVD-2: Use of Aspirin or Another Antithrombotic	Clinical Process/Effectiveness
Prev-5: Screening Mammography	Clinical Process/Effectiveness
Prev-6: Colorectal Cancer Screening	Clinical Process/Effectiveness
Prev-8: Pneumonia Vaccination for Patients >= 65	Population/Public Health
Prev-9: BMI Screening and Follow Up	Population/Public Health
Care-1: Medication Reconciliation: Reconciliation After Discharge from an Inpatient Facility	Patient Safety

B. ACO GPRO Quality Measures

To be eligible to receive a PQRS incentive payment, each group of physicians that participated as an ACO in the 2012 Medicare Shared Savings Program or the Pioneer ACO Model was required to report through the ACO GPRO web interface its performance on 22 clinical quality measures endorsed by the National Quality Forum. These measures target high-cost chronic conditions and preventive care in three key areas. The At-Risk Population area includes five chronic condition disease modules: CAD (includes one "all-or-nothing" composite

measure, consisting of two individually-reported CAD measures), diabetes mellitus (includes a stand-alone individual measure plus an "all-or-nothing" composite measure consisting of 5 individually-reported diabetes measures), heart failure (1 measure), hypertension (1 measure), and IVD (2 measures). The Preventive Health area includes 8 measures, and the Care Coordination/Patient Safety area includes 2 measures.[12]

For each group of physicians participating in an ACO, the 2012 QRURs display the number of cases and performance rate for the 22 measures for the ACO under which the group is registered (shown in QRUR Exhibits 4). That is, every group of physicians (as identified by their TIN) participating in the same ACO receives the same performance data in the QRUR for the 22 measures reported by the ACO under which the groups are registered. The 2012 QRURs also display the peer group's mean (benchmark) performance and average performance range (the benchmark plus or minus one standard deviation) for each measure with a benchmark available in the prior year (2011).

For each group of physicians and set of measures, CMS pre-populated a database with a sample of Medicare beneficiaries attributed to the group and who met the eligibility criteria for those measures. Each ACO was required to report clinical data based on services furnished during calendar year 2012 for at least the first 411 assigned patients (with an oversample of 616 patients) for each of the five At-Risk Population disease modules and each Preventive Health or Care Coordination measure. If a particular module or measure applied to fewer than 411 beneficiaries, the group had to submit clinical data for 100 percent of the assigned patients for that module or measure. Note that a sample was used only for these 22 quality indicators. For all other QRUR measures applicable to ACO participants, *all* attributed beneficiaries eligible for a measure are included (that is, not just a sample).

One-half of the 22 ACO GPRO clinical quality measures were reported in 2011 through either a 2011 individual eligible professional PQRS reporting option (via claims, EHRs, or registries) or the 2011 PQRS GPRO web interface. Because any measure included in the VBM quality composite score requires a 2011 prior year benchmark to calculate the measure's standardized score, only those 11 measures were included in the 2012 VBM quality composites, with two exceptions: Lipid Control (CAD-2) and ACE Inhibitor or ARB Therapy for Patients with CAD and Diabetes and/or LVSD (CAD-7). These two measures are part of an all-or-nothing composite measure, but prior year performance rates are available only for each measure separately. Therefore, neither is included in the 2012 quality composites for ACO participants.

Exhibit IV.2 lists the 9 ACO GPRO measures, mapped to quality domains, that are included in the 2012 quality composite score calculation for groups of physicians participating in an ACO if the group had at least 20 eligible cases for the measure.

[12] A list of these measures and their specifications can be found in the 2012 Downloads section of CMS' Medicare Shared Savings Program web page at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ACO_QualityMeasures.pdf. Accessed September 5, 2013.

Exhibit IV.2. ACO GPRO PQRS Measures Included in the 2012 Quality Composite

Quality Measures	Quality Domain
DM-2: Hemoglobin A1c Poor Control in DM (>9.0)	Clinical Process/Effectiveness
HF-6: Beta Blocker Therapy for LVSD	Clinical Process/Effectiveness
HTN-2: Controlling High Blood Pressure	Clinical Process/Effectiveness
IVD-2: Use of Aspirin or Another Antithrombotic	Clinical Process/Effectiveness
Prev-5: Screening Mammography	Clinical Process/Effectiveness
Prev-6: Colorectal Cancer Screening	Clinical Process/Effectiveness
Prev-8: Pneumonia Vaccination for Patients >= 65	Clinical Process/Effectiveness
Prev-9: BMI Screening and Follow Up	Population and Public Health
Care-1: Medication Reconciliation: Reconciliation After Discharge from an Inpatient Facility	Patient Safety

C. Administrative Claims-Based Quality Measures

In 2013, groups of physicians that do not select the PQRS GPRO Web Interface or registry reporting mechanism[13] are able to request that Medicare compute for the VBM their performance on a set of 14 administrative claims-based quality measures.[14] For each group of physicians with 25 or more eligible professionals in 2012 that did not participate in the 2012 GPRO program, the Medicare Shared Savings Program, or the Pioneer ACO Model, performance on the 14 measures was derived from 2012 Medicare FFS claims submitted for all Medicare beneficiaries attributed to the group in 2012. The measures are grouped into seven disease modules: bone, joint, and muscle disorders (1 measure); COPD (1 measure); diabetes mellitus (4 measures); IVD (2 measures); mental health (2 measures, each with two rates); medication management (2 measures, one with two rates); and preventive care (1 measure).[15]

The claims-based quality measures are calculated solely from Medicare administrative claims submitted for medical services rendered and are not enhanced with additional clinical information. The measurement year—that is, the period during which services were delivered to patients—for calculating these measures is January 1, 2012 through December 31, 2012. For measures requiring a look-back period, claims were available for a one-year period, to January 1, 2011. Only services recorded on claims, which include those reimbursed as part of a bundled payment but require itemization on claims, are counted in computing quality measures.

[13] This includes groups participating in the 2012 Comprehensive Primary Care Initiative.

[14] Requests can be made via the Physician Value-Physician Quality Reporting System. For more information, see http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Self-Nomination-Registration.html. Accessed September 5, 2013.

[15] A list of these measures and their specifications can be found at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/14-Admin-Claims-Measure-specs.pdf. Accessed September 12, 2013.

The 2012 QRURs display the number of cases and performance rate for each of the 14 measures for each non-GPRO group (shown in QRUR Exhibits 4). The 2012 performance rates are based on the measure steward's 2012 measure specifications. The QRURs also display the prior year 2011 benchmark rate and weighted standard deviation of the measure. Prior-year benchmarks are calculated for all 14 measures based on the measure steward's 2011 measure specifications.

Exhibit IV.3 lists the 14 administrative claims-based quality measures, mapped to quality domains, included in the 2012 quality composite score for groups of physicians that did not participate in either the PQRS GPRO program or an ACO in 2012, if the group has at least 20 eligible cases for the measure. Note that three of these measures are two-part measures.[16]

Exhibit IV.3. Administrative Claims-Based Quality Measures Included in 2012 Quality Composite for Groups of Physicians Not Participating in the GPRO Program or an ACO in 2012

Quality Measures	Quality Domain
Osteoporosis Management in Women ≥ 67 Who Had a Fracture	Clinical Process/Effectiveness
Use of Spirometry Testing to Diagnose COPD	Clinical Process/Effectiveness
Dilated Eye Exam for Beneficiaries ≤ 75 with Diabetes	Clinical Process/Effectiveness
Hba1c Testing for Beneficiaries ≤ 75 with Diabetes	Clinical Process/Effectiveness
Nephropathy Screening Test or Evidence of Existing Nephropathy for Beneficiaries ≤ 75 with Diabetes	Clinical Process/Effectiveness
Lipid Profile for Beneficiaries ≤ 75 with Diabetes	Clinical Process/Effectiveness
Lipid Profile for Beneficiaries with Ischemic Heart Disease	Clinical Process/Effectiveness
Adherence to Statin Therapy for Beneficiaries with Coronary Artery Disease	Clinical Process/Effectiveness
Antidepressant Treatment for Depression:	Clinical Process/Effectiveness
Acute Phase Treatment (at least 12 weeks)	Clinical Process/Effectiveness
Continuation Phase Treatment (at least 6 months)	Clinical Process/Effectiveness
Lipid Profile for Beneficiaries Who Started Lipid-Lowering Medications	Clinical Process/Effectiveness
Breast Cancer Screening for Women Ages 40–69	Clinical Process/Effectiveness
Use of High-Risk Medications in the Elderly:	Patient Safety
Patients Who Receive At Least One Drug to be Avoided	Patient Safety
Patients Who Receive At Least Two Different Drugs to be Avoided	Patient Safety
Lack of Monthly INR Monitoring for Beneficiaries on Warfarin	Patient Safety
Follow-Up After Hospitalization for Mental Illness:	Care Coordination
Percentage of Patients Receiving Follow-Up Within 30 Days	Care Coordination
Percentage of Patients Receiving Follow-Up Within 7 Days	Care Coordination

[16] The group's standardized score is computed individually for each of the two sub-measures under each of the three primary measures, but then the two sub-measure scores for the primary measure are combined with equal weight to determine the primary measure's score. The primary measure's score is then included in the quality domain score calculation.

D. Ambulatory Care Sensitive Condition Measures

The Agency for Healthcare Research and Quality (AHRQ) has developed a set of Prevention Quality Indicators (PQIs) that includes measures of potentially avoidable hospitalizations for ambulatory care sensitive conditions (ACSCs). The measures rely on hospital discharge data but are not intended to measure hospital quality. Rather, high or increasing rates of hospitalization for these conditions in a defined population of patients might indicate inadequate access to high quality ambulatory care. The 2012 QRURs display six individual measures (for bacterial pneumonia, urinary tract infection, dehydration, diabetes, COPD or asthma, and heart failure) and two composite measures of hospital admissions. The two composite ACSC measures are included in calculating the group's quality composite score for the VBM if the group has at least 20 eligible cases for the measure (shown in QRUR Exhibit 4-CC). The admission rates are calculated from 2012 Medicare Part A claims data based on the individual PQIs shown in Exhibit IV.4 below. The individual diabetes ACSC measure is actually a composite of the four PQI diabetes indicators listed in the exhibit.

Exhibit IV.4. AHRQ Prevention Quality Indicators Used to Calculate ACSC Rates

	Acute Conditions Composite
PQI #11	Bacterial Pneumonia Admission Rate
PQI #12	Urinary Tract Infection Admission Rate
PQI #10	Dehydration Admission Rate
	Chronic Conditions Composite
PQI #01	Diabetes Short-Term Complications Admission Rate (included in diabetes composite)
PQI #03	Diabetes Long-Term Complications Admission Rate (included in diabetes composite)
PQI #14	Uncontrolled Diabetes Admission Rate (included in diabetes composite)
PQI #16	Rate of Lower-Extremity Amputation Among Patients With Diabetes (included in diabetes composite)
PQI #05	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate
PQI #08	Heart Failure Admission Rate

Source: AHRQ and Mathematica Policy Research

For all ACSC measures, AHRQ PQI software programs are applied to acute care hospital claims to identify hospitalizations for each ACSC, based on diagnostic and procedure information on the claims.[17] The ACSC measures are risk adjusted for age and sex by comparing the group's actual rate of potentially avoidable hospitalizations to an expected rate.

For a given ACSC measure, the numerator of the actual rate is the number of hospitalizations among beneficiaries attributed to the group and eligible for the measure who were identified as having been hospitalized in 2012 for the condition (as identified by the primary diagnosis on the inpatient claim) associated with the measure.[18]

For acute ACSC measures, the denominator of the actual rate is Medicare beneficiaries attributed to the group being assessed who are 18 or older and do not have a missing value for gender. For chronic ACSC measures, the denominator is beneficiaries attributed to the group who have been identified through claims as having the relevant condition and who meet the measures' other conditions for inclusion (for example, 40 years or older and no missing value for gender for the COPD/Asthma measure). Beneficiaries with one of the four chronic conditions are identified using the most current claims-based guidance developed by CMS' Chronic Conditions Data Warehouse (CCW)[19] to determine whether the pattern of utilization observed in Medicare claims indicates the presence of the condition for the beneficiary during the surveillance period, either during the current or prior year. Three of the conditions require a two-year reference period: diabetes; CAD, which uses the ischemic heart disease algorithm; and heart failure.

For each ACSC measure, the expected rate reflects the average experience of Medicare beneficiaries in the same age category and of the same gender as those attributed to the group, calculated based on a logistic regression model where the dependent variable is an indicator of

[17] More information is available at http://www.qualityindicators.ahrq.gov/modules/pqi_overview.aspx. Accessed June 30, 2013. Note that AHRQ's PQIs are population-based area measures, indicating the rate of hospitalizations for ACSCs within a given geographic region. The measures included in the QRURs differ from the PQIs in that they include in the denominator, only those beneficiaries attributed to the group practice (or those attributed beneficiaries with a specific condition), rather than all adults in a specified geographic area. Additionally, the QRUR ACSC measures adjust rates for months in which beneficiaries did not have both Medicare Part A and Part B in 2012, and exclude beneficiaries with missing data for gender or age. The QRUR ACSC rates also exclude hospitalizations with a missing principal diagnosis and hospitalizations identified as direct transfers from another acute care hospital because the discharge date on the prior hospital stay and the admission date on the current hospital stay are the same.

[18] The exception to this is diabetes. In addition to the principal diagnosis, hospital stays with a lower extremity amputation, evidenced by a procedure code, and a diabetes diagnosis, principal or secondary, will qualify as an ACSC.

[19] The QRUR algorithms closely follow those of the CCW, with two exceptions: (1) a comparison of the CCW code list with the ICD-9-CM handbooks for corresponding years resulted in the addition of two codes (362.07 for diabetes and 414.4 for CAD) that are not included in the CCW list but clinically should be included; (2) in contrast to CCW documentation, the QRURs require that, for conditions requiring at least two outpatient claims, the claims must occur on different dates at least one day apart. See http://www.ccwdata.org/cs/groups/public/documents/document/ccw_conditioncategories2011.pdf, accessed September 5, 2013, for a list of condition definitions.

whether the beneficiary had a hospitalization for the ACSC condition and the independent variables are 14 sex-by-age category indicators.

The risk-adjusted rate for each ACSC measure is calculated as the ratio of the actual rate to the expected rate, multiplied by the average actual rate per 1,000 beneficiaries (for acute ACSCs) or the rate per 1,000 beneficiaries with the specified condition (for chronic ACSCs). This average is the population condition-specific hospital discharge rate per 1,000 Medicare beneficiaries (or per 1,000 beneficiaries with the condition) across all groups of physicians with 25 or more eligible professionals.

The acute conditions composite measure (consisting of bacterial pneumonia, urinary tract infection, and dehydration ACSCs) is computed as the simple (equally-weighted) average of its three component measures; the number of eligible cases associated with the acute composite measure is the number of cases in the component measure denominators. By contrast, the chronic conditions composite measure is a case-weighted average of the three chronic condition component measures (the diabetes composite, COPD or asthma, and heart failure ACSCs). Because the same beneficiary may have multiple chronic conditions and, therefore, appear in multiple component measures, the chronic conditions composite measure may be thought of as measuring potentially avoidable hospitalizations relative to opportunities for such hospitalizations; the number of eligible cases associated with the chronic composite measure is the number of such opportunities. As with the other quality measures, the 2012 QRURs display the 2011 prior-year benchmark rate (the weighted mean performance rate among all of the group's peer group, where the weight is the number of eligible cases for the group) and weighted standard deviation of the measure.

E. All-Cause Hospital Readmission Measure

Readmission following an acute care hospitalization is a costly and often preventable event. Hospital readmission is also disruptive to patients and caregivers and puts patients at additional risk of hospital-acquired infections and complications. Some readmissions are unavoidable, but others might result from poor quality of care, inadequate coordination of care, or lack of effective discharge planning and transitional care. The all-cause hospital readmissions measure included in the 2012 QRURs is a physician group–specific all-cause 30-day rate of acute care hospital readmissions for beneficiaries aged 65 years and older who were discharged from an acute care or critical access hospital from January 1, 2012 through December 1, 2012 (shown in QRUR Exhibit 4-CC). The measure is a risk standardized readmission rate based on unplanned readmissions, for any cause, within 30 days from the date of discharge of an index admission. Each admission is assigned to one of five specialty cohort groups consisting of related conditions or procedures: medicine, surgery/gynecology, cardiorespiratory, cardiovascular, and neurology. The risk standardized rate is then derived from a weighted mean of five statistical models, which adjust for case and service mix. The quality indicator is the same as the risk standardized all-condition hospital readmission measure used in the Medicare Shared Savings Program, as well as the 30-day hospital-wide readmission measure publicly reported in 2013 for the Hospital

Inpatient Quality Reporting Program, except that it is calculated at the physician group level instead of the hospital facility level.[20]

Eligible admissions for the measure consist of nearly all hospitalizations at non-federal, short-stay acute-care or critical access hospitals for most beneficiaries attributed to the group. Admissions related to medical treatment of cancer, primary psychiatric disease, or rehabilitation care, fitting of prostheses, and adjustment devices are excluded. The measure does not apply to beneficiaries who were under age 65 on January 1, 2012, discharged against medical advice, or transferred to another acute care hospital. Beneficiaries who died during the hospitalization, had a hospital stay greater than 365 days, or did not have continuous enrollment in Medicare Part A for at least one month following discharge or in the 12 months prior to admission are likewise excluded. The outcome for this measure is an unplanned, all-cause 30-day readmission. A readmission is defined as any unplanned admission at a non-federal, short-stay, acute-care or critical access hospital that occurs within 30 days of discharge from the index admission (that is, the initial hospitalization). Thus, "planned" readmissions are excluded. Planned readmissions are those in which one of 35 typically planned procedures occurs, the discharge condition category is not acute or a complication of care or the readmissions are for maintenance chemotherapy, organ transplant, or rehabilitation. All other readmissions are considered unplanned and counted as a readmission.[21]

To adjust to patient case mix, regression adjustment was applied. In addition, index admissions are grouped into five mutually exclusive specialty cohorts—surgery/gynecology, cardiorespiratory, cardiovascular, neurology, and medicine—based on the presumption that admissions treated by similar teams of clinicians are likely to have similar risks of readmission. Readmissions are risk adjusted via hierarchical logistic regression models. For each of the five cohorts, a standardized readmission rate, equal to the ratio of the number of predicted readmissions to the number of expected readmission, is computed; specifically, the predicted number of readmissions is based on the hospital's performance with its observed case and service mix and the expected number is based on the performance of an average hospital with the same case and service mix. Thus, a readmission ratio less than one indicates lower-than-expected readmissions, or better quality, and a readmission ratio greater than one indicates higher-than-expected readmissions, or worse quality.

The risk adjustment logistic regression adjusts for beneficiary case mix based on patient age and clinical characteristics, with comorbid risk variables captured through selected CMS Condition Category (CMS-CC) groups. CMS-CCs are formed by first mapping *International Classification of Diseases–9th Revision, Clinical Modification* (ICD-9-CM) diagnosis codes to a single diagnosis group (DXG) that represents a well-specified medical condition, such as DXG 96.01 (precerebral or cerebral arterial occlusion with infarction). DXGs are aggregated further into Condition Categories. Condition Categories describe a broader set of similar diseases.

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[20] See http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Measure-ACO-8-Readmission.pdf. Accessed September 5, 2013.

[21] For additional information on the hospital readmission measure, see https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1219069855841. Accessed September 5, 2013.

Although not as homogeneous as DXGs, diseases within a Condition Category are related clinically and with respect to cost. For simplicity and ease of data collection and analysis, a fixed, common set of Condition Category variables is used in each of the five specialty-cohort risk-adjustment regression models. The regression also adjusts for a group's specific risk of readmission, after accounting for patient risk.

The specialty-cohort specific standardized risk ratios are then combined for each group. Using the number of eligible admissions, a case-weighted geometric mean of the standardized risk ratios of the five specialty-cohorts is computed to create a group-specific composite standardized risk ratio. It then is multiplied by the national crude readmission rate for all beneficiaries across all groups to represent the measure in the 2012 QRURs as the risk-standardized readmission rate.

V. WHICH RESOURCE USE MEASURES ARE INCLUDED IN THE VBM'S COST COMPOSITE SCORE?

Two sets of resource use indicators for a group's attributed Medicare beneficiaries are displayed in the 2012 QRURs (shown in QRUR Exhibit 7) and included in the 2012 cost composite score for the VBM for all groups. A total per capita cost measure is calculated for all beneficiaries attributed to the group (subject to measure-specific exclusions), and four chronic condition–specific per capita cost measures are calculated for all beneficiaries attributed to the group with the specific chronic condition.

A. Overview of Per Capita Cost Measures

The 2012 QRURs include several resource use measures based on per capita costs. All costs are payment standardized, and both unadjusted and risk-adjusted per capita costs are reported. Payment standardization and risk adjustment are employed to accommodate differences in costs among peers that result from circumstances beyond physicians' control. Unadjusted costs for each group of physicians are calculated as the sum of all payment-standardized Medicare Part A and Part B allowed charges (Part D prescription drug spending is not included) for all attributed beneficiaries, divided by the number of attributed beneficiaries. The per capita risk-adjusted cost measure is calculated as the ratio of the group's unadjusted per capita costs to its expected per capita costs, as determined by the risk adjustment algorithm. This ratio then is multiplied by the mean cost of all beneficiaries included in all 2012 QRURs to denominate the risk-adjusted cost measure in dollars. A risk-adjusted cost less than the mean beneficiary cost reflects a group of physicians for which actual (that is, unadjusted) costs were less than expected costs for the group's attributed beneficiaries. Conversely, a risk-adjusted cost that is greater than the mean beneficiary cost reflects a group of physicians for which actual (that is, unadjusted) costs were higher than expected costs for the group's attributed beneficiaries.

The cost measures use 2012 administrative claims data that include: inpatient hospital; outpatient hospital; skilled nursing facility; home health; hospice; durable medical equipment, prosthetics, orthotics, and supplies (DMEPOS); and Medicare Carrier (non-institutional physician/supplier) claims. All claims with a missing, zero, negative or very low[22] payment amount are excluded from the measures. Costs associated with Medicare Part D services (outpatient prescription drugs) are not included.[23] To the extent that Medicare claims include such information, costs comprise payments to providers from Medicare, beneficiaries (copayments and deductibles), and third-party private payers. In addition to the general exclusions in Section II.B, attributed beneficiaries enrolled in both Medicare Parts A and B for

[22] Claims with standardized allowed amounts under 50 cents were excluded. In many cases, these represent claims that provide clinical information—such as a quality-data code for a PQRS measure—for which nominal amounts must be included because the provider's billing software cannot accommodate a charge of $0.00.

[23] Part D (outpatient prescription drug) costs were excluded from the cost measure calculations because not all beneficiaries have Medicare Part D, and some who do not have it instead have creditable prescription drug coverage through other insurance sources or the retiree subsidy, for which Medicare does not have claims data. As of September 2012, 37 percent of all Medicare beneficiaries were not enrolled in a Medicare Part D plan (http://kff.org/medicare/fact-sheet/the-medicare-prescription-drug-benefit-fact-sheet/, accessed September 5, 2013).

only part of the year (including those who died or were newly enrolled in Medicare in 2012) are excluded from the per capita cost measures, along with all costs associated with their care.

In addition to measuring total per capita costs for each group's attributed patients, payment-standardized and risk-adjusted per capita costs are reported by type of service—including E&M visits,[24] inpatient hospital facility services, and laboratory and other tests. Because total per capita costs are payment-standardized and risk-adjusted, unadjusted costs for each service type 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 a total per capita cost for a group that is 10 percent lower than the group's unadjusted cost. Reported per capita costs for each type of service are computed by reducing the unadjusted per capita cost for each type of service by 10 percent.

The per capita costs for specific services are not included as separate measures in the cost composite for the VBM but are reported for informational purposes only. Non-risk-adjusted and risk-adjusted per capita costs also are reported separately for beneficiaries with diabetes, CAD, COPD, and heart failure. These four condition-specific per capita cost measures constitute the specific-conditions cost domain and are included in the overall cost composite.

For all of these measures and statistics (total per capita cost, service-specific per capita costs, and condition-specific per capita costs), the 2012 QRURs also display the peer group's mean (benchmark) performance and average performance range (the benchmark plus or minus one standard deviation) for each measure. For the total per capita cost measure, the QRURs also show the distribution of risk-adjusted per capita costs for all groups of physicians included in the relevant peer group, based on a ranking of the measure from lowest to highest performance, and an indication of where the group's costs fall in relation to others. The percentile ranking of a group's own performance is displayed, as well as the per capita costs associated with the 25th, 50th, 75th, and 100th percentiles (shown in QRUR Exhibit 8).

Additionally, by broad type-of-service categories, the QRURs display the positive or negative difference between the group's (risk-adjusted) per capita costs and the peer group's average (risk-adjusted) per capita costs for the particular service (shown in QRUR Exhibits 9 and 10).

The remainder of this section provides details on payment standardization methods, risk adjustment, and the computation of per capita costs for specific services and subgroups of beneficiaries with the four chronic conditions. Additional details regarding payment standardization and risk adjustment are in Appendices C and D, respectively.

B. Payment Standardization

Geographic variation in Medicare payments to providers can reflect factors unrelated to the care provided to patients. For most types of medical services, Medicare adjusts payments to

[24] Note that E&M services included in the QRUR's service-specific table include all E&M services, not only the subset of E&M services classified as primary care services for the purpose of attributing beneficiaries to group practices.

providers to reflect differences in local input prices (for example, wage rates and real estate costs). Failure to account for these differences would result in non-meaningful and unfair comparisons of resource across groups of physicians located in different geographic areas or practicing in different settings. Before any resource use measures are calculated for the QRUR, 2012 Medicare unit costs are standardized to equalize payments for each specific service provided in a given health care setting. The standardized payment for a given service is the same, regardless of the state or city in which the service was provided or differences in Medicare payment rates among the same class of providers (for example, prospective payment hospitals versus critical access hospitals). Unit costs refer to the total reimbursement paid to providers for services delivered to Medicare beneficiaries. These can include discrete services (such as physician office visits or consultations) or bundled services (such as hospital stays). The standardized payment methodology, described in further detail in Appendix C, does the following:

- Eliminates adjustments made to national allowed payment amounts to reflect differences in regional labor costs and practice expenses
- Eliminates payments not directly related to services rendered, such as graduate medical education (GME), indirect medical education (IME), and disproportionate share hospital (DSH) payments to hospitals
- Substitutes a national amount for services paid on the basis of state fee schedules
- Maintains differences in actual payments resulting from the choice of setting in which a service is provided, the choice of who provides the service, and the choice of whether to provide multiple services in the same encounter
- Adjusts outlier payments for differences in area wages

Additional details relating to the payment standardization algorithm (which is also used for CMS' Medicare Spending Per Beneficiary measure under its Hospital Value-Based Purchasing program), are available at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228772057350.[25]

C. Risk Adjustment

Risk adjustment accounts for patient differences that can affect their medical costs, regardless of the care provided. Per capita cost measures for the QRUR are risk adjusted so groups of physicians can be compared more fairly to their peers. Risk-adjusted costs for a group attributed a disproportionate number of high-risk beneficiaries will be lower than the group's unadjusted costs because the high-risk beneficiaries' expected costs will exceed the average beneficiary cost across all groups; similarly, risk-adjusted costs will be higher than unadjusted costs for groups that are attributed comparatively low-risk beneficiaries. Risk adjustment of the per capita cost measures employs two models sequentially: the CMS-HCC risk-adjustment

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

model produces beneficiary-level risk scores that are then input into a subsequent QRUR risk-adjustment model to yield the risk adjustment factors applied to each group of physicians receiving a QRUR.

Costs are risk adjusted prospectively using prior year (2011) 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 ICD-9 diagnosis codes obtained from Medicare claims to 70 HCC categories that have related disease characteristics and costs.[26] The model also incorporates sex, age, original reason for Medicare entitlement (either age or disability), and Medicaid enrollment. Each risk score summarizes in a single number each Medicare beneficiary's 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 2011 risk factors to predict 2012 costs[27]—to ensure that the model measures the influence of health on the treatment provided (costs incurred), rather than the converse of measuring the influence of treatment on a beneficiary's health status.

To limit the influence of outliers on the calculation of risk-adjusted costs, attributed beneficiaries across all groups of physicians with costs in the bottom one percent of the payment-standardized (but non-risk-adjusted) distribution of costs are excluded before estimating the QRUR risk-adjustment model, whereas the payment-standardized, non-risk-adjusted costs of beneficiaries with costs exceeding the 99th percentile have their costs reset to the 99th percentile value (a process known as Winsorizing).

The QRUR risk-adjustment model regresses beneficiary costs on a constant, the beneficiary's risk score, the squared value of the risk score, and an indicator for the presence of ESRD.[28] This model then is used to compute the expected cost for each beneficiary across all QRUR groups, given the beneficiary's risk profile (that is, risk score and ESRD status). A group's expected per capita costs are equal to the sum of expected costs of all attributed beneficiaries, divided by the number of attributed beneficiaries. As noted earlier, each group's risk-adjusted per capita cost is computed as the ratio of unadjusted per capita costs to expected per capita costs, multiplied by the mean beneficiary cost across all QRUR groups.

Appendix D displays the 70 HCCs that CMS incorporates into its risk scores and provides additional detail on the steps for risk adjusting 2012 QRUR per capita cost measures.

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[26] The HCC model uses diagnoses identified for a patient within a given year to predict health risks for the following year, along with potential resource utilization. The model consists of cost groups, or diagnoses, that are grouped into the 70 HCCs. These are groups of similar diagnoses that CMS has deemed risk factors for patients. Each HCC has a specific weight (and specific reimbursement tied to it from which a Medicare Advantage Contractor is paid). HCC scores are calculated each year for each Medicare beneficiary.

[27] In contrast to a prospective model, a "concurrent" risk adjustment model would use current year (2012) beneficiary risk factors to predict current year (2012) beneficiary medical costs.

[28] The CMS-HCC model actually generates several different risk scores. For beneficiaries with a full year of medical claims history in 2011, the HCC community risk score is used. For those lacking a full year of medical claims history, the HCC new enrollee score is used. The ESRD indicator is taken from the beneficiary enrollment data rather than the CMS-HCC model. Details are in Appendix D.

D. Per Capita Costs by Type of Service

The 2012 QRURs report total per capita costs for all services in total and by detailed type of service, all of which sum to the total (shown in QRUR Exhibits 9 and 10, respectively). The goal of separating per capita costs into categories of services is to provide groups of physicians with details on how their costs of delivering specific health care services compare with those of their peers. However, different categories of service can be substitutes or complements. For example, groups of physicians providing more ambulatory preventive care might avoid some hospitalizations of their patients, leading to higher E&M costs but lower inpatient hospital costs compared with peers (service substitutes). At the same time, higher numbers of E&M visits also could be associated with higher ancillary services, such as diagnostic tests (service complements). Displaying costs by categories of service provides greater detail on areas in which providers might 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 groups might 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 lists the categories of services displayed in the 2012 QRURs. Appendix F provides more detail on how Medicare claims are categorized into one (and only one) of the service categories displayed in the Appendix E table.

Calculation of service-specific per capita costs requires classifying each service rendered into a unique category. This is accomplished according to the mapping from claim types, provider types, and CMS Berenson-Eggers Type of Service (BETOS) codes to service categories in Appendix F (Exhibit F.1). Any service that does not fit into one of the specifically listed services categories is assigned to the All Other Services Not Otherwise Classified category. Appendix F (Exhibit F.2) contains brief descriptions of each BETOS category.

In addition to separating costs according to service type, for two categories—E&M Services and Procedures in Non-Emergency Settings—services are first identified according to whether the group itself provided the service to an attributed beneficiary or whether some other group provided the service. Then, for each of these two categories, service costs are further identified by the broad specialty category of the medical professionals rendering them: primary care physicians (PCPs), medical specialists, surgeons, and other professionals (separately by all four categories for services delivered by the group itself, and by PCPs versus the other three categories combined for services delivered by other groups). The Other Professionals category includes, for example, physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, clinical social workers, clinical psychologists, dieticians, audiologists, and physical and speech-language therapists. The method for determining a medical professional's specialty is described in Appendix G, which includes an exhibit showing how specialties map to specialty categories.

Risk-adjusted per capita costs by type of service for a group of physicians are calculated by first computing the total payment-standardized, non-risk-adjusted service-specific costs per capita for all beneficiaries attributed to the group. These unadjusted service-specific per capita costs are then multiplied by a factor that includes the ratio of the mean *total* (not service-specific)

cost of all beneficiaries across all groups to the expected total per capita cost of beneficiaries attributed to the group[29] (from the risk adjustment algorithm) and also accounts for the Winsorization process employed in developing total risk-adjusted costs. This calculation modifies the service-specific per capita costs by rescaling these costs with the same scale factor used to risk adjust total per capita costs. Such an adjustment ensures that the adjusted service-specific per capita costs sum across all service categories to the reported total per capita cost for the group.

For example, suppose that risk adjustment results in a total per capita cost for the group that is 10 percent lower than the group's unadjusted cost (and that none of the group's attributed beneficiaries had their costs Winsorized). 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.

E. Total Per Capita Costs for Condition-Specific Medicare Beneficiary Subgroups

In addition to reporting each group's total per capita costs for all beneficiaries attributed to the group, the 2012 QRURs display total per capita costs for attributed beneficiaries with selected chronic health conditions: diabetes, CAD, COPD, or heart failure (shown in QRUR Exhibit 7). Chronic health conditions are diseases or illnesses commonly expected to require ongoing monitoring to avoid loss of normal life functioning and not expected to improve or resolve without treatment. Total per capita cost measures for these subgroups include the costs associated with all 2012 Medicare claims (except for Part D-covered prescription drugs) and are not limited to costs associated with treating the condition itself. Additionally, the four selected chronic conditions are not mutually exclusive; many Medicare beneficiaries have more than one of these chronic conditions. Consequently, a group's total per capita cost for beneficiaries with one of these chronic conditions reflects the total cost of treating these beneficiaries, not the cost of treating the condition.

Calculation of subgroup-specific per capita costs requires first identifying beneficiaries who have the chronic conditions of interest and then computing each group's payment-standardized and risk-adjusted per capita cost for the subset of beneficiaries attributed to the group who have that condition. Four risk-adjustment models, which are the same as the model for total per capita costs, for beneficiaries with diabetes, CAD, COPD, and heart failure are estimated separately to risk adjust the per capita costs of each beneficiary subgroup.

As with the ACSC measures, beneficiaries are identified as having one or more of the four chronic conditions of interest by using the most current claims-based guidance developed by the CCW to determine whether the pattern of utilization observed in Medicare claims indicates the presence of the condition for the beneficiary during the surveillance period.

[29] This process is necessary because risk adjustment is done only at the total cost level rather than at the type of service level.

VI. WHAT OTHER INFORMATION IS AVAILABLE TO PHYSICIANS ACCESSING THEIR QRURS?

In addition to selected group quality and resource use measures, and the quality and cost composite scores that make up the VBM, the 2012 QRURs provide supplemental information relating to beneficiary attribution, hospital use, and incentives earned. Beginning in 2013, beneficiary-level and admission-level data will also be available to groups of physicians receiving a QRUR.

A. Additional Information Included in the QRUR

For informational purposes, the 2012 QRUR displays several statistics related to beneficiary attribution to groups of physicians. These include the total number of beneficiaries attributed to the group, the number of beneficiaries attributed because primary care physicians provided the plurality of primary care services (listed in Exhibit II.1), and the number of beneficiaries attributed because non-primary care specialists provided the plurality of primary care services. The QRURs also display the average percentage of primary care services provided by the QRUR group per attributed beneficiary, again overall and for primary care physicians and non-primary care specialists separately (shown in QRUR Exhibit 1). The average percentage of primary care services is calculated by first computing for each attributed beneficiary the ratio of allowed charges for primary care services billed by the group for that beneficiary to the allowed charges for primary care services billed by *all* groups for that beneficiary in 2012 and multiplying the ratio by 100 to express it as a percentage. The average percentage of primary care services is then simply the average of these percentages across all attributed beneficiaries. Also reported are peer group averages for both the number of attributed beneficiaries and the average percentage of primary care services provided by the group.

Additional attribution-related statistics reported in the 2012 QRURs include the average number of eligible professionals in all care settings who treated the group's attributed beneficiaries in 2012 and the percentage of these professionals not associated with the group (that is, who did not bill under the group's TIN in 2012). Each of these statistics also is compared with the peer group average (shown in QRUR Exhibit 2).

The 2012 QRURs also include information about hospital use by attributed beneficiaries. Specifically, the reports include a list of hospitals accounting for at least five percent of all admissions for the group's attributed beneficiaries in 2012 (shown in QRUR Exhibit 5). A hospital admission is counted as a single hospital stay and refers to all types of hospitals, such as short-term acute, long-term, and psychiatric hospitals.

Finally, for groups of physicians participating in the GPRO program, the 2012 QRURs report the dollar value of any incentive earned from successful participation in the 2012 PQRS program (shown in Appendix B-1 for qualifying groups).

B. Detailed Information on Beneficiaries, Admissions, and Eligible Professionals

For the first time, CMS is providing detailed tables online that groups of physicians can view and download to obtain more information on each Medicare beneficiary attributed to the group, the physicians and other eligible professionals who billed under the group's TIN in 2012, and hospital admissions during 2012 for the group's attributed beneficiaries.

1. Characteristics of Attributed Beneficiaries

Drill Down Table 1 provides the Medicare Health Insurance Claim (HIC) number of all beneficiaries attributed to the group under the attribution rule (described in Section II.A). For each of these beneficiaries, the table lists the beneficiary's gender, date of birth, whether they died in 2012, and the HCC risk score percentile. The beneficiary's HCC risk score is compared to all other Medicare beneficiaries, with higher percentiles indicating higher risk. This is the same CY2011 HCC risk score described in Appendix A and used to risk adjust the per capita cost measures included in the VBM cost composite (Section V.C) and identify groups with attributed beneficiaries who have high average risk scores for the purpose of determining whether the group is eligible for an additional VBM payment adjustment under the quality tiering table (Section III.C). Additionally, the table lists whether the beneficiary was treated for diabetes, CAD, COPD, or heart failure in CY2012.

The table also provides selected information on attributed beneficiaries' FFS claims, including the date of the last professional service claim (either an E&M service or procedure for which an affiliated provider with the group billed Medicare in 2012 for the beneficiary), the number of primary care services the group's physicians and non-physician practitioners—including clinical nurse specialists, nurse practitioners, or physician assistants—provided to the beneficiary in 2012, and the proportion that these primary care services represent of all primary care services received by the beneficiary in 2012. In addition, the table displays the date the beneficiary was last admitted to any hospital in 2012.

Further information provided in the table includes a breakdown of total medical care costs by type of major service category that each of the group's attributed beneficiaries received in 2012. The service categories are the same as displayed in Exhibit 10 of the 2012 QRURs (defined in Appendixes E and F): E&M services, procedures, inpatient hospital care, outpatient hospital care, emergency services, ancillary services, post-acute care services, and all other medical services.

2. Physicians and Non-Physician Eligible Professionals Billing Under the Group's TIN

For each physician or other eligible professional who filed a Medicare professional service (Part B) claim in 2012 and was the performing provider on a claim for at least one of the group's attributed beneficiaries, Drill Down Table 2 displays each provider's NPI, name, and whether he or she is a physician or a non-physician eligible professional (as defined in Appendix G). The table also lists each provider's specialty designation, obtained from CMS' Provider Enrollment, Chain, and Ownership System (PECOS). Where multiple specialties are listed, the provider is assigned the specialty recorded most often on those 2012 Part B claims for which the professional was the performing provider. Finally, the table lists the date of the last claim that the provider billed under the group's TIN in 2012.

3. Attributed Beneficiaries' Hospital Admissions for Any Cause

For each of the group's attributed beneficiaries who were hospitalized in 2012, Drill Down Table 3 lists the beneficiary's Health Insurance Claims (HIC) number, gender, date of birth, and details about the beneficiary's hospital admissions in 2012. These include the date of admission, the admitting hospital name, the principal diagnosis on the hospital claim, whether the admission was through the hospital's emergency department, whether the hospitalization was for one of the

six ACSC conditions (see Section IV.D), and whether there was a readmission to any hospital for any cause 30 days following discharge (Section IV.E). Hospital admissions with a principal diagnosis for conditions associated with alcohol and substance abuse are excluded from these Drill Down tables but are included in Exhibit 5. Admission through the hospital's emergency department was determined by examining revenue center codes on the hospital's claim, with any of the following indicating that the beneficiary was admitted through the emergency department: codes 0450 (general emergency room), 0451 (Emergency Medical Treatment and Labor Act emergency medical screening services), 0452 (emergency room beyond Emergency Medical Treatment and Labor Act screening), 0456 (urgent care), 0459 (other emergency room), or 0981 (emergency room professional fees).

Each hospital stay also includes the date of discharge and to where the beneficiary was discharged (home, skilled nursing facility, and so on). Discharge status was determined by examining the two-digit patient discharge status code on the last claim in a hospital stay, which identifies where the patient was located at the conclusion of the health care facility encounter (Exhibit VI.1).

Exhibit VI.1. Medicare Hospital Claim Patient Discharge Status Codes

Discharge Status Code	Discharge Status
01	Discharged to Home
02	Transferred to Another Short-Term General Hospital
03	Discharged to a Skilled Nursing Facility
04	Discharged to an Intermediate Care Facility
06	Discharged to Home Under Care of a Home Health Service Organization
07	Left Against Medical Advice or Discontinued Care
20	Expired/Died in Hospital
50, 51	Discharged to a Hospice
61	Discharged to a Hospital-Based Medicare Approved Swing Bed
62	Discharged to an Inpatient Rehabilitation Facility or Unit
63	Discharged to a Long-Term Care Hospital
65	Discharged to a Psychiatric Hospital or Unit
All other codes	Other type of discharge

APPENDIX A
DESCRIPTION OF DATA SOURCES

Multiple data sources were used to calculate the performance measures included in the 2012 QRURs. Performance on the PQRS GPRO or ACO GPRO quality indicators is derived from the information each participating group of physicians submitted to CMS through the 2012 GPRO web interface. The 14 administrative claims-based quality measures used 2012 Medicare enrollment and Parts A, B, and D paid claims extracted from CMS' systems. The per capita cost, service-specific per capita cost, chronic condition subgroup-specific per capita cost, hospital readmission rate, ACSC composite measures, and the utilization statistics and chronic condition indicators used 2012 Medicare enrollment and Parts A and B FFS paid claims extracted from CMS' systems as the primary data sources. HCC risk scores were used in the risk-adjustment models for per capita costs. Each of these data sources is discussed in detail below.

A. GPRO and ACO GPRO Quality Indicator Data

The PQRS quality measures included in the 2012 QRUR—reflecting care for beneficiaries with diabetes, heart failure, CAD, IVD, COPD, and hypertension, as well as care coordination and preventive care measures—are the same indicators the group of physicians submitted to the 2012 GPRO or ACO GPRO Physician Quality Reporting System. Data requirements for these programs are described in Sections IV.A and IV.B of the detailed methodology above.

Prior-year measures used for calculating peer group benchmarks for the GPRO and ACO GPRO PQRS measures (when a comparable measure was available in the prior year) are the same indicators that participating groups of physicians submitted to the 2011 GPRO Physician Quality Reporting System. Prior-year data also include performance on PQRS measures for physicians who participated in the PQRS program individually through claims-based reporting, EHRs, or registries, and who were eligible for a PQRS incentive payment in 2011. Individually reported physician measures are rolled up to the group (TIN) level for non-GPRO groups by summing numerators for all physicians billing under the TIN who reported the measure, summing denominators for the same physicians, and dividing the numerator sum by the denominator sum.

B. Medicare Enrollment Data

The Medicare Part A and Part B enrollment data contain demographic and enrollment information about each beneficiary enrolled in Medicare during a calendar year. The data include the beneficiary's unique Medicare identifier, state and county residence codes, ZIP code, date of birth, date of death, sex, race, age, monthly Medicare entitlement indicators, reasons for entitlement, whether the beneficiary's state of residence paid for the beneficiary's Medicare Part A or Part B monthly premiums ("state buy-in"), and monthly Medicare managed care enrollment indicators. The Medicare Part D enrollment data include monthly indicators for the type of outpatient prescription drug plan in which a beneficiary is enrolled. A beneficiary is considered enrolled in Part D if the data indicate enrollment in a prescription drug plan, a managed care organization (other than a regional preferred provider organization), or an employer-sponsored plan.

C. Medicare Claims

Computations for the 14 administrative claims–based quality measures, the ACSC measures, the all-cause readmissions measure, and the resource use measures are based on all 2012 final-action Medicare claims available on CMS' Integrated Data Repository (IDR) as of April 10, 2013. Specifically, inpatient hospital, outpatient hospital, skilled nursing facility, home health, hospice, carrier (physician/supplier), DMEPOS, and outpatient prescription drug (Part D) claims are analyzed as appropriate for the relevant measure. (For instance, the per capita cost measures do not include Part D drug costs, but several of the administrative claims–based quality measures analyze Part D drug claims in determining measure performance.)

Under Medicare procedures, when an error is discovered on a claim, a duplicate claim is submitted indicating that the prior claim was in error; a subsequent claim containing the corrected information can then be submitted. The IDR contains only the *final action* claims developed from the Medicare National Claims History database—that is, non-rejected claims for which a payment has been made after all disputes and adjustments have been resolved and details clarified. The scope of claims on the IDR is national. ZIP code is the most discrete level of geographic detail available. Data are submitted continually from Medicare Administrative Contractors (MACs) to CMS and updated at least weekly on the IDR. For the purposes of producing the 2012 QRURs, the end date of the claim determines the calendar year with which the claim is associated. Providers submit claims to their MAC for processing and payment. The MAC forwards all claims to CMS, where they are stored in the Common Working File and the National Claims History database. The National Claims History database is the source of FFS claims in the IDR. Prior-year data used for calculating either peer group benchmarks for the claims-based quality measures or performance rates for measures that require a "look-back" period are final action Medicare claims obtained from the IDR for the appropriate calendar year.

D. Hierarchical Condition Category (HCC) Risk Scores

Clinical differences among patients can affect their medical costs, regardless of the care provided. For peer comparisons, a group's per capita costs and subgroup-specific per capita costs are risk adjusted based on the unique mix of patients the group treated during a given period. For the 2012 QRURs, a CMS-HCC model was used that assigns ICD-9 diagnosis codes to 70 clinical conditions, grouping codes with similar disease characteristics and costs together. The CMS-HCC risk-adjustment model adjusts payments for Part C benefits offered by Medicare Advantage plans and payments to the Program of All-Inclusive Care for the Elderly organizations for aged or disabled beneficiaries. The model predicts costs based on disease, demographic, and insurance factors from the previous year. There are separate sets of coefficients for beneficiaries in the community; beneficiaries in long-term care institutions; new Medicare enrollees; and beneficiaries with ESRD in dialysis, transplant, and functioning-graft status (both community and institutional).

To risk adjust costs for the 2012 QRURs, the 2011 community and new enrollee HCC risk scores are used as inputs into a second risk-adjustment model described in Appendix D; the ESRD and institutional scores are not used. Because the ESRD model is concurrent, an ESRD indicator (yes or no) from the 2011 enrollment data is used instead of the ESRD HCC risk score. Inclusion of the indicator instead of the concurrent score in the risk-adjustment model permits estimation of the prospective impact of ESRD on costs. Because institutionalization during the year is endogenous, no adjustment is made for institutional status; the effect of

institutionalization on costs is small, on average, once the HCC risk scores are included in the risk-adjustment model.

APPENDIX B
EXCLUSIONS APPLIED TO ATTRIBUTED BENEFICIARIES

Exclusion criteria were applied at different times to various data used in creating the QRURs. When beneficiaries were attributed to groups participating in the GPRO program or an ACO for the purpose of submitting quality indicator information for PQRS, the most recent Medicare beneficiary enrollment files had information on the enrollment status of beneficiaries only through October 2012; for some variables, data are complete only through June 2012. Complete information for all of 2012 is available for computing the administrative claims–based quality, ACSC, all-cause hospital readmission, and resource use measures. Regardless of when exclusion criteria were applied to attributed beneficiaries, exclusions were determined according to the following steps:

1. Identify beneficiaries with less than a full year of FFS claims. The 2012 enrollment data are used to determine which beneficiaries had less than a full calendar year of FFS claims in 2012 for any of the following reasons:
    a. **The beneficiary was enrolled in Medicare managed care during the year.** A beneficiary is considered to have enrolled in managed care if, for any month of the year, the health maintenance organization (HMO) indicator field in the enrollment data has a value other than 0 ("not a member of HMO") or 4 ("fee-for-service participant in case or disease management demonstration project").
    b. **The beneficiary gained or lost Part A or B entitlement during the year.** A beneficiary is considered to have gained or lost Part A or Part B entitlement if, for any month of the year, the buy-in indicator field in the enrollment data has a value other than 3 ("Part A and Part B") or C ("Parts A and B, State Buy-In").
    c. **The beneficiary's address in 2012 indicates that he or she lived outside of the United States or a U.S. Territory.** A beneficiary is considered to live outside of the U.S. in 2012 if the state code in the Medicare beneficiary enrollment file is not a U.S. state or U.S. territory code.

2. Exclude beneficiaries. Exclude from PY2012 QRUR claims-based measures and statistics all attributed beneficiaries identified in the previous steps who:
    a. Were in Medicare managed care at any time in 2012
    b. Had one or more months in 2012 in which they had only Part A or only Part B
    c. Were not enrolled in both Medicare Part A and Part B for at least one month in 2012
    d. Resided outside of the United States or its territories in 2012

3. Exclude additional beneficiaries from cost measures. In addition to the exclusions listed in reason 2 above, the following beneficiaries were also excluded from the per capita cost measures:

a. **The beneficiary was enrolled in both Part A and Part B for only part of the year.** These are beneficiaries who had both Part A and Part B during the time they were covered by Medicare in 2012 but did not have both Parts A and B for all 12 months of 2012.

4. Exclude additional beneficiaries from administrative claims-based quality measures. In addition to the exclusions listed in reason 2 above, beneficiaries were excluded from a particular measure denominator based on the measure steward's measure specifications. For a list of exclusions specific to each of these measures, see Administrative Claims-Based Quality Measures, included in the Quality and Resource Use Reports for Medical Group Practices, available at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/14-Admin-Claims-Measure-specs.pdf**.**

APPENDIX C
PAYMENT STANDARDIZATION

Acumen, LLC, a CMS contractor, standardized payments for all 2012 Medicare claims. Mathematica merged these standardized payments with original Medicare claims by the 4-part claim key[30] provided both in the Integrated Data Repository (IDR) and in the standardized payment data stored on the IDR. This appendix summarizes the standardization method for each of the seven Medicare claim types: inpatient hospital, outpatient hospital, skilled nursing facility (SNF), home health agency, hospice, carrier (physician services), and DMEPOS. This appendix is a summary of key parts of the payment standardization methodology. Full details of this methodology are available at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228772057350.

A. Inpatient Hospital Claims

The standardized payment for a stay at an acute care hospital, critical access hospital (CAH), Maryland waiver hospital, or cancer hospital is built as the sum of national base payment rates for labor, non-labor, and capital expenditures, multiplied by the stay's diagnosis-related group rate. Any outlier payments are added in and adjusted for geographic differences using the hospital wage index. Device payments are subtracted out, and new technology and clotting factor payments are added in. The standardization excludes graduate medical education (GME), indirect medical education (IME), and disproportionate share payments (DSH). Standardized payments for transfer stays and discharges to post-acute care facilities are calculated as the lesser of the national base payment rates for labor, non-labor, and capital expenditures, multiplied by the stay's diagnosis-related group rate or a per diem amount that is built up and excludes GME, IME, and DSH and adjusts for labor differences by applying a standardized per diem rate. Claims from Maryland hospitals, CAHs, and cancer hospitals are standardized using the same methods as other Acute Care Hospital Inpatient Prospective Payment System (IPPS) hospitals because these hospitals provide a similar set of acute hospital services as IPPS hospitals, even though they are paid under special systems.

Inpatient psychiatric facility (IPF) standardized payments are built up from the national base payment rate, multiplied by the IPF adjustment factor, the age factor, the comorbidity factor, and the variable per diem factor based on length of stay (LOS). Any outlier payments are added in and adjusted for geographic differences, using the hospital wage index for the labor share and the cost of living adjustment (COLA) for the non-labor share. Device payments are subtracted out, and new technology is added in, as are electroconvulsive therapy base payments, times the number of units.

Long-term care hospital (LTCH) standardized payments for claims that have shorter lengths of stay than usual for an LTCH are calculated as the actual payment amount on the claim plus any deductible or coinsurance amount, adjusted for differences in wages using the hospital wage index for the LTCH labor share and the COLA for the non-labor share. LTCH standardized

[30] The 4-part key consists of four fields (geo_bene_sk, clm_dt_sgntr_sk, clm_type_cd, c.clm_num_sk) in the IDR claims table, and when used together, it uniquely identifies a claim.

payments for normal lengths of stay are built up from the national base payment rate, multiplied by the long-term care diagnosis-related groups (LTC-DRG) weight. Any outlier payments are added in and adjusted for geographic differences using the hospital wage index for the LTCH labor share and the COLA for the non-labor share. Device payments are subtracted out, and new technology and clotting factor payments are added in.

Inpatient Rehabilitation Facility (IRF) short-stay standardized payments are built up from the national IRF base payment rate, which is multiplied by a case-mix group (CMG)/tier-specific per diem amount and adjusted for the length of stay. Any outlier payments are added in and adjusted for geographic differences using the IRF hospital wage index. The IRF hospital wage index is determined based on the provider ID and the IRF provider specific file. The Core Based Statistical Area (CBSA) of the provider is taken from the IRF provider specific file, and the associated wage index is used from the IRF wage index file included with the IRF pricer on the CMS website. If the CBSA of a provider cannot be determined, a wage index of 1.0 is assumed. Device payments are subtracted out, and new technology and clotting factor payments are added in. IRF-standardized payments for normal IRF claims are built up from the national IRF base payment rate, multiplied by the CMG weight for the discharge. Any outlier payments are added in and adjusted for geographic differences using the IRF hospital wage index. Device payments are subtracted out, and new technology and clotting factor payments are added in.

Payments for other inpatient stays are standardized by adjusting the total payment (including deductible and coinsurance) for differences in area wages.

The online documentation referenced above provides additional details about the identification of short-stay transfers and post-acute care facility discharges, the identification of Maryland hospitals, and the identification of interim claims.

B. Skilled Nursing Facility (SNF) Claims

The standardization procedure for SNF claims depends on the type of SNF claim, of which there are four: prospective payment system SNF claims, CAH swing bed claims, SNF claims for beneficiaries without Part A coverage or who have exhausted this coverage, and claims for outpatient services provided by SNFs. For prospective payment system claims, the standardized payment is equal to the applicable rehabilitation resource utilization group (RUG) per diem rate, multiplied by the number of Medicare covered days and an AIDS adjustment, if applicable. The RUG applicable per diem rate is equal to the average of the urban and rural base rates for the RUG. If the RUG on the revenue center line cannot be matched to a RUG weight, then the standardized payment is equal to the actual payment with coinsurance added back in, adjusted for differences in area wages.

For CAH swing bed claims, the standardized payment is the actual payment with coinsurance added back in, adjusted for differences in area wages.

SNF claims for beneficiaries without Part A coverage or who have exhausted this coverage and claims for outpatient services provided by SNFs are standardized using the HCPCS code on each revenue center line and standardized similarly to other Part B fee schedule claims by using the physician fee schedule, the clinical laboratory fee schedule, the ambulance fee schedule, and the DMEPOS fee schedule, as applicable.

C. Home Health Agency Claims

The standardization method for home health claims depends on whether the claim type is designated as home health or outpatient and, if the former, whether or not the claim receives special treatment. For full-episode home health claims, the standardized payment is built up from the base rate for each Home Health Resource Group (HHRG), multiplied by the applicable HHRG weight and added to a supply amount; outlier payments adjusted by the labor-related wage rate; and any add-ons for prosthetics, durable medical equipment (DME), or oxygen present on the claim. For home health claims that indicate partial-episode payment, the base rate times the HHRG weight and the supply amount are adjusted by the number of days between the first and last visit, divided by 60. Outlier payments are adjusted by the labor related wage index and added on to the standardized amount.

If the home health claim is for a short episode (fewer than five visits), the standardized payment is built up by using the number of visits of each type, times the associated per-visit base rate, plus a low utilization payment adjustment (LUPA) add-on amount if applicable.

For claims identified by their claim type as outpatient claims, the standardized payment is calculated using the HCPCS code on each revenue center line and standardized similarly to other Part B fee schedule claims by using the physician fee schedule, the clinical laboratory fee schedule, the ambulance fee schedule, and the DMEPOS fee schedule, as applicable.

D. Hospice Claims

The standardization of hospice claims depends on the revenue center code for each line item. If the revenue center code is for services furnished to patients by a physician or nurse practitioner, then the standardized payment is calculated the same way as physician services; that is, it is equal to the conversion factor multiplied by the sum of (the relevant work Relevant Value Units [RVUs] * Adjuster $^{+}$ transitioned practice expense RVUs + malpractice RVUs). If the modifier code indicates that the services are provided by a nurse practitioner, a 15 percent reduction is applied to the payment. If the revenue center code for a line item indicates continuous home care, the standardized payment is equal to the base rate for continuous home care for that year, times the number of units. Units are calculated as the revenue center units divided by four (revenue center units are reported in 15-minute increments) and are limited to no more than 24. If the revenue center code indicates that the service is for routine home care, inpatient respite care, or general inpatient care, the standardized payment is equal to the base rate for that type of care for that year, multiplied by the minimum of the number of units and the length of stay as indicated by the number of covered utilization days on the claim.

E. Outpatient Hospital Claims

The standardization method for an outpatient hospital claim depends on whether the claim is for a service paid on a reasonable cost or pass-through basis, under the Outpatient Prospective Payment System (OPPS), or under another fee schedule. Outpatient hospital claims from Maryland are standardized using the same methods as non-Maryland claims to allow for uniform national standardization. Outpatient hospital claims from CAHs also are standardized using the same methods as for non-CAH hospitals using a crosswalk from HCPCS code to APC (APCs are not listed on CAH claims). The three methods are the following:

1. Revenue center lines for reasonable cost or pass-through services[31]
2. Revenue center lines with an ambulatory payment classification (APC, paid under OPPS)
3. Revenue center lines with status indicating services not paid under OPPS

Revenue center lines for reasonable costs or pass-through services are standardized by using the actual payment and adding in the coinsurance and deductible amounts from the revenue center line.

There are four different categories of revenue center lines with an APC: those for procedures subject to multiple-procedure discounting; those for ancillary services; those that can be linked to the OPPS fee schedule; and those that cannot be linked to the OPPS fee schedule. For lines subject to multiple-procedure discounting, the standardized payment is constructed by adjusting the actual payment by a coinsurance adjustment factor, adding in the deductible, and adjusting by the labor-related wage rate. For ancillary service lines, the standardized payment is set to the actual payment amount, plus any applicable cost sharing for that line. For revenue center lines that can be linked to the OPPS fee schedule, the standardized payment is set equal to the APC schedule amount for the HCPCS code on the revenue line minus the device credit (if applicable), multiplied by the number of units on the revenue line, and adjusted for multiple procedures as indicated by the modifier on the revenue line item. APC revenue center lines that cannot be linked to the OPPS fee schedule are standardized as the actual payment amount, plus any applicable cost sharing for that line.

Revenue center lines not paid under OPPS are standardized by using the rates indicated on the various Part B fee schedules (physician, clinical laboratory, ambulance, and DMEPOS).

Although the CMS methodology available online standardizes all outpatient hospital claim outlier payments at the claim-level, development of certain components of the QRUR requires outpatient hospital claims at the line-item level. Consequently, neither actual nor standardized outlier payments are added on to the line-level standardized payments for outpatient hospital claims.

The standardized amounts of some additional services whose claims appear in the hospital outpatient file are calculated separately. These include the following:

1. Rural health clinics and federally qualified health centers, for which standardized payments are equal to actual payment amounts, plus deductibles and coinsurance, adjusted for wage differences.
2. Comprehensive outpatient rehabilitation facilities and outpatient rehabilitation facilities, for which standardized payments are calculated in the same way as those

[31] Reasonable cost or pass-through revenue center lines are identified by status indicators: F (corneal tissue acquisition, certain certified registered nurse anesthetist services, and hepatitis B vaccines); G (drug/biological pass-through); H (device or therapeutic radiopharmaceuticals pass-through); and L (influenza or pneumococcal pneumonia vaccines).[+]

for services paid under the physician fee schedule. For services that do not match a fee schedule, the standardized amount is equal to the actual allowed amount.

3. Community mental health centers, for which standardized payments are calculated in the same way as those for services paid under the OPPS fee schedule.
4. Renal dialysis facilities, for which the standardized payment is equal to the actual claim payment amount, minus outlier payments and a wage-adjusted training payment (if applicable), plus deductible and coinsurance, all adjusted by the End Stage Renal Disease (ESRD) labor related wage index; the result is added to the unadjusted training payment, plus the outlier payment.

F. Physician Services Claims

Payments for services included in the carrier claims file are standardized using various methods, depending on the type of service. These claims can be categorized into six broad areas:

1. Physician services, including all E&M; all procedures; all imaging; laboratory diagnostic tests paid under the physician fee schedule and non-laboratory diagnostic tests; chiropractic services; vision, hearing, and speech services; and other services
2. Anesthesia services
3. Ambulatory surgical center (ASC) services
4. Clinical laboratory services
5. Part B-covered drugs
6. Ambulance services

Standardized payments for the physician services are calculated by multiplying the annual conversion factor by the sum of the relevant work, transitioned practice expense, and malpractice relative value units (RVUs). Adjustments are made for technical versus professional components, multiple procedures, co-surgeon and assistant surgeon deductions, non-physician-supplied services, facility versus non-facility settings, and number of units. These aspects of the claims are specified in modifier and place-of-service fields at the individual line-item level of each claim. The adjusted amount is multiplied by the number of units to reach the final standardized amount.

Standardized payments for anesthesia services are calculated by multiplying the anesthesia conversion factor for the relevant year by the sum of the base units for the specified anesthesia HCPCS code and the units for that service on the line item. An additional multiple-procedure discount or certified registered nurse anesthetist adjustment also may apply, as specified in the modifier field of the line item.

Standardized payments for ASC services generally are equal to the ASC fee schedule amount for the service provided, minus any device reduction amounts for that service, multiplied by the number of units, and adjusted for multiple procedures.

Standardized payments for clinical laboratory services are equal to the national limit amounts for specified services (as captured by HCPCS codes), multiplied by the number of units. If a HCPCS code has a national limit amount equal to zero, or if the code indicates an automated

general profile, the standardized amount is equal to the actual claim line payment amount plus the coinsurance and deductible for that claim line.

The standardized payment for Part B-covered drugs is equal to the actual claim line payment amount plus the coinsurance and deductible for that claim line.

Ambulance services are standardized using two methods. For claim lines for mileage, the standardized amount is equal to the arithmetic mean of the actual allowed claim line amounts for the year for all claims. For all other ambulance services, the standardized amount is equal to the mean of the actual line amounts over all line items in the claims data set associated with the specific ambulance HCPCS code present on the claim line.

G. Durable Medical Equipment, Prosthetics, Orthotics, and Surgical Supplies (DMEPOS) Claims

In general, the standardized payment for durable medical equipment line items is equal to the ceiling of the DMEPOS fee schedule relevant for that service, times an adjustment factor based on the modifier code for the service, times the number of units. If the HCPCS code refers to a device that is for prosthetics, orthotics, or surgical supplies, the standardized payment is equal to five-sixths times the DME fee schedule amount for that HCPCS code and modifier, times the number of units. The basic approach to standardization is the same for both competitive and non-competitive bidding.

APPENDIX D
RISK ADJUSTMENT

In computing per capita costs for the QRURs, cost data for 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 group practice-specific risk-adjusted per capita cost for attributed beneficiaries that serves as the basis for comparison among groups of physicians.

1. **Calculate each beneficiary's total 2012 costs.** For each beneficiary attributed to a group, sum the beneficiary's total payment-standardized 2012 Medicare Part A and Part B claims costs.
2. **Exclude beneficiaries with the lowest costs and modify high costs.** Remove from further analysis those beneficiaries with total costs in the bottom one percent of the cost distribution of all beneficiaries with positive payment-standardized total costs who were attributed to all groups.[32] To limit the influence of the highest-cost patients on the risk-adjustment model, total costs for beneficiaries in the top one percent (highest costs) are replaced with the value of the 99th percentile of the distribution of total patient costs, a process known as Winsorization.
3. **For each beneficiary, use the appropriate risk score.** For new enrollees without a full year of medical history, use the new-enrollee risk score produced by CMS' New Enrollee CMS-HCC Model, and for all others, use the community risk score.[33] Exhibit D.1 below displays the 70 HCCs that CMS uses in its model to produce HCC risk scores.
4. **Compute expected beneficiary costs.** To compute expected beneficiary costs, the 2012 payment-standardized total costs (after Winsorization) of retained beneficiaries are regressed on the following independent variables:
   - 2011 HCC community risk score
   - 2011 HCC community risk score squared
   - 2011 HCC new-enrollee risk score
   - 2011 HCC new-enrollee risk score squared
   - 2011 indicator of ESRD

   Only one risk score—either the community score or the new-enrollee score—is used for each beneficiary in the regression. If a beneficiary has only one score, that score

[32] A close examination of the data, when this model was under development, revealed that the majority of extremely low- or zero-value claims are likely erroneous. All claims following payment standardization with a zero payment amount are dropped from the analysis, so no beneficiary has a total 2012 payment-standardized cost equal to zero.

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

is used and the other is given a value of zero in the regression. If a beneficiary has both scores, the old-enrollee score is used. The regression yields a set of coefficients—one per independent variable; each coefficient measures the association between its corresponding independent variable and total beneficiary cost when the other independent variables are held constant.

5. **Compute expected costs at the beneficiary level.** For each beneficiary attributed to a given group, use the coefficients from the regression model estimated in Step 4 to compute the beneficiary's expected costs, given the beneficiary's HCC risk score, type of score (community or new enrollee), and ESRD status.
6. **Compute the ratio of observed to expected costs at the group level.** For each group, sum the total Winsorized payment-standardized (but unadjusted) costs for all beneficiaries attributed to the group, and divide that sum by the sum of expected costs computed for the same set of beneficiaries.
7. **Compute risk-adjusted per capita costs.** For each group, multiply the ratio of observed to expected costs computed in the previous step by the mean Winsorized payment-standardized (but unadjusted) total cost among all beneficiaries included in the QRUR reports.

Exhibit D.1. Hierarchical Condition Categories (HCCs) Included in the CMS-HCC 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 = Parkinson's and Huntington's Diseases	HCC176 = Artificial Openings for Feeding or Elimination
HCC74 = Seizure Disorders and Convulsions	HCC177 = Amputation Status, Lower Limb/Amputation Complications

APPENDIX E
SPECIFIC SERVICE CATEGORIES MEASURED IN THE 2012 QRURS

The 2012 QRURs display per capita costs by specific types of services. The major categories reported, along with the subcategories that constitute the major categories and are also reported, are listed in Exhibit E.1.

Exhibit E.1. Specific Service Categories Measured in the 2012 QRURs

	Major Category	Subcategories
1a.	E&M Services in Non-Emergency Settings Provided by Your Group	Services from primary care physicians Services from medical specialists Services from surgeons Services from other eligible professionals
1b.	E&M Services in Non-Emergency Settings Provided by Other Groups	Services from primary care physicians Services from medical specialists, surgeons, and other eligible professionals
2a.	Procedures in Non-Emergency Settings Provided by Your Group	Procedures by primary care physicians Procedures by medical specialists Procedures by surgeons Procedures by other eligible professionals
2b.	Procedures in Non-Emergency Settings Provided by Other Groups	Procedures by primary care physicians Procedures by medical specialists, surgeons, and other eligible professionals
3.	Inpatient Hospital Facility Services	None
4.	Outpatient Hospital Facility Services (Excluding Emergency Outpatient	None
5.	Emergency Services That Did Not Result in a Hospital Admission	Emergency visits Procedures Laboratory and other tests Imaging services
6.	Services in Non-Emergency Ambulatory Settings	Laboratory and other tests Imaging services Durable medical equipment
7.	Post-Acute Care	Skilled nursing facility Home health Psychiatric, rehabilitation, or other post-acute care
8.	Other Services Billed by Non-Institutional Providers	Ambulance services Chemotherapy and other Part B–covered drugs All other services not otherwise classified

APPENDIX F
DETAILED DESCRIPTION OF CATEGORIES OF SERVICES METHOD

Each Medicare claim is categorized into one of the service categories displayed in the exhibit in Appendix E. Claim costs are included in a given service category based on the claim type, BETOS code, place of service, and/or provider type (Exhibit F.1). CMS assigns a BETOS code to each HCPCS code that may appear on a carrier or outpatient hospital claim. 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, and G0344. 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 one and 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 Exhibit F.2.

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

.	.	Criteria for Including Claim (Line Item) in Category		
Category	Claim Type	BETOS Criterion	Place of Service Criterion	Specialty Criterion
All Services	Sum of 1a, 1b, 2a, 2b, 3, 4, 5, 6, 7, 8	.	.	.
1a. E&M Services in Non-Emergency Settings—Your Group	Carrier claim line items minus Ambulatory Surgical Center (ASC) claims (CMS specialty code on the Carrier line item = 49 or claim type of service = "F")	All Carrier line items with M1–M6 codes	Carrier place of service not equal to 23 (emergency room)	CMS specialty code NOT in {"31," "45," "47," "49," "51"–"61," "63," "69," "73"–"75," "87"–"88," "95"–"96," "A0"–"A8," "B2"–"B5," and "C1"} AND limited to Carrier line items provided by a performing NPI associated with the TIN ("Your Group")
1b. E&M Services in Non-Emergency Settings—Other Groups	Carrier claim line items minus Ambulatory Surgical Center (ASC) claims (CMS specialty code on the Carrier line item = 49 or claim type of service = "F")	All Carrier line items with M1–M6 codes	Carrier place of service not equal to 23 (emergency room)	CMS specialty code NOT in {"31," "45," "47," "49," "51"–"61," "63," "69," "73"–"75," "87"–"88," "95"–"96," "A0"–"A8," "B2"–"B5," and "C1"} AND limited to Carrier line items provided by a performing NPI NOT associated with the TIN ("Other Groups")

.	.	Criteria for Including Claim (Line Item) in Category		
Category	Claim Type	BETOS Criterion	Place of Service Criterion	Specialty Criterion
2a. Procedures in Non-Emergency Settings—Your Group	Carrier claim line items minus Ambulatory Surgical Center (ASC) claims (CMS specialty code on the Carrier line item = 49 or claim type of service = "F")	All Carrier line items with P1–P9 codes	Carrier place of service not equal to 23 (emergency room)	CMS specialty code NOT in {"31," "45," "47," "49," "51"–"61," "63," "69," "73"–"75," "87"–"88," "95"–"96," "A0"–"A8," "B2"–"B5," and "C1"} AND limited to Carrier line items provided by a performing NPI associated with the TIN ("Your Group")
2b. Procedures in Non-Emergency Settings—Other Groups	Carrier claim line items minus Ambulatory Surgical Center (ASC) claims (CMS specialty code on the Carrier line item = 49 or claim type of service = "F")	All Carrier line items with P1–P9 codes	Carrier place of service not equal to 23 (emergency room)	CMS specialty code NOT in {"31," "45," "47," "49," "51"–"61," "63," "69," "73"–"75," "87"–"88," "95"–"96," "A0"–"A8," "B2"–"B5," and "C1"} AND limited to Carrier line items provided by a performing NPI NOT associated with the TIN ("Other Groups")
3. Inpatient Hospital Facility Services	Inpatient short-stay hospital claims	Not applicable	Provider (CCN) number ends in {0001–0899} or {1300–1399]	Not applicable
4.Outpatient Hospital Facility Services (excluding emergency outpatient)	Outpatient hospital claims, plus ASC Carrier claims	All M1–M6, P1–P9, I1–I4, or T1–T2 codes	Carrier place of service not equal to 23 (for ASC claims); Outpatient revenue center line code NOT in {0450–0459, 0981} for Outpatient claims (emergency room)	CMS specialty code on the Carrier line item = 49 or claim type of service = "F" (ASC)
5. Emergency Services that did not result in a hospital admission: All Emergency Services	Sum of 5a-5d	.	.	.
5a. Emergency Services that did not result in a hospital admission: Emergency Visits	Outpatient hospital claims, plus Carrier claim line items minus ASC claims	All M1–M6 codes	Carrier place of service = 23 or Outpatient revenue center line code in {0450–0459, 0981}	CMS specialty code NOT in {"31," "45," "47," "49," "51"–"61," "63," "69," "73"–"75," "87"–"88," "95"–"96," "A0,"–"A8," "B2"–"B5," and "C1"}

.	.	Criteria for Including Claim (Line Item) in Category		
Category	Claim Type	BETOS Criterion	Place of Service Criterion	Specialty Criterion
5b. Emergency Services that did not result in a hospital admission: Procedures	Outpatient hospital claims, plus Carrier claim line items minus ASC claims	All P1–P9 codes	Carrier place of service = 23 or Outpatient revenue center line code in {0450–0459, 0981}	CMS specialty code NOT in {“31,” “45,” “47,” “49,” “51”–“61,” “63,” “69,” “73”–“75,” “87”–“88,” “95”–“96,” “A0”–“A8,” “B2”–“B5,” and “C1”}
5c. Emergency Services that did not result in a hospital admission: Laboratory and Other Tests	Outpatient hospital claims, plus Carrier claim line items minus ASC claims	All T1–T2 codes	Carrier place of service = 23 or Outpatient revenue center line code in {0450–0459, 0981}	CMS specialty code NOT in {“31,” “45,” “47,” “49,” “51”–“61,” “63,” “69,” “73”–“75,” “87”–“88,” “95”–“96,” “A0”–“A8,” “B2”–“B5,” and “C1”}
5d. Emergency Services that did not result in a hospital admission: Imaging Services	Outpatient hospital claims, plus Carrier claim line items minus ASC claims	All II–I4 codes	Carrier place of service = 23 or Outpatient revenue center line code in {0450–0459, 0981}	CMS specialty code NOT in {“31,” “45,” “47,” “49,” “51”–“61,” “63,” “69,” “73”–“75,” “87”–“88,” “95”–“96,” “A0”–“A8,” “B2”–“B5,” and “C1”}
6. Services in Non-Emergency Ambulatory Settings: All Ancillary Services	Sum of 6a–6c	.	.	.
6a. Ancillary Services: Laboratory and Other Tests	Carrier claim line items minus ASC claims	All T1–T2 codes	Carrier place of service not equal to 23 (emergency room)	Not applicable
6b. Ancillary Services: Imaging Services	Carrier claim line items minus ASC claims	All I1–I4 codes	Carrier place of service not equal to 23 (emergency room)	Not applicable
6c. Ancillary Services: Durable Medical Equipment	Durable Medical Equipment claims	Not applicable	Not applicable	Not applicable
7. Post-Acute Care: All Post-Acute Services	Sum of 7a–7c plus Hospice claims	Not applicable	Not applicable	Not applicable
7a. Post-Acute Services: Skilled Nursing Facility	Skilled nursing facility claims	Not applicable	Not applicable	Not applicable
7b. Post-Acute Services: Home Health	Home health clams	Not applicable	Not applicable	Not applicable
7c. Post-Acute Services: Psychiatric, Rehabilitation, or Other Post Acute Care	Inpatient hospital claims	Not applicable	Provider (CCN) number ends in {2000–2299, 3025–3099, 4000–4499} or its third position is in {M, R, S, T}	Not applicable

.	.	Criteria for Including Claim (Line Item) in Category		
Category	Claim Type	BETOS Criterion	Place of Service Criterion	Specialty Criterion
8. Other Services Billed by Non-Institutional Providers: All Other Services	Sum of 8a-8c	.	.	.
8a.Other Services: Ambulance Services	Carrier claim line items	OA1 codes	Not applicable	Not applicable
8b. Other Services: Chemotherapy and Other Part B-Covered Drugs	Carrier claim line items	O1D, O1E OR HCPCS code = A4324, A5119, A9207, G0513, K0739, K0743, K0744, PD143, WW002, WW003, WW005, WW006, WW011, WW020, WW030, WW040, WW080, WW090, WW093, WW140, 06390, 10165, 11221, 13912, 17613, 50431, 50627, 8CC01, 8PD52 or 92707	Not applicable	Not applicable
8c. Other Services: All Other Services Not Otherwise Classified	Remainder of total costs from claims files (excluding Part D)	Not applicable	Total costs associated with all claims and/or line items not identified in rows above	Not applicable

Exhibit F.2. 2012 BETOS Codes and Descriptions

Code	Description
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
M5B	Specialist—psychiatry
M5C	Specialist—ophthalmology
M5D	Specialist—other
M6	Consultations
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/excisdisc
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

Exhibit F.2 *(continued)*

Code	Description
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)
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
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
Durable Medical Equipment	
D1A	Medical/surgical supplies
D1B	Hospital beds
D1C	Oxygen and supplies
D1D	Wheelchairs

Exhibit F.2 *(continued)*

Code	Description
D1E	Other DME
D1F	Prosthetic/orthotic devices
D1G	Drugs administered through DME
Other	
O1A	Ambulance
O1B	Chiropractic
O1C	Enteral and parenteral
O1D	Chemotherapy
O1E	Other drugs
O1F	Hearing and speech services
O1G	Immunizations/vaccinations
Exceptions/Unclassified	
Y1	Other—Medicare fee schedule
Y2	Other—non–Medicare fee schedule
Z1	Local codes
Z2	Undefined codes

Source: Centers for Medicare & Medicaid Services Health Care Common Procedure Coding System, 2012.

Note: For a crosswalk of HCPCS codes to BETOS codes, see http://www.cms.gov/apps/ama/license.asp?file=/MedHCPCSGenInfo/downloads/betpuf12.zip (select r-me-bet12.txt) Accessed September 5, 2013.

APPENDIX G
PHYSICIAN SPECIALTIES AND PROFESSIONAL STRATIFICATION CATEGORIES

To display information on the type of medical professionals providing E&M services or procedures for a group's attributed beneficiaries, the 2012 QRUR requires information on whether the medical professionals are physicians and the broad specialty category into which they fall: primary care physician, medical specialist, surgeon, or other eligible professional. The QRURs use the two-digit CMS specialty codes that appear on Medicare Carrier claims to define specialties. Before developing the reports, CMS identified which specialties should be considered physicians—namely, doctors of medicine and doctors of osteopathic medicine. Assignment of medical professionals to broad specialty categories, referred to here as professional stratification categories, is performed in two steps. First, each provider is assigned a medical specialty. Second, each specialty is assigned a broad specialty category.

A. Determining the Medical Specialty of Medical Professionals

For some medical professionals, different CMS specialty codes are included on different claims—for example, general practitioner versus endocrinologist—depending on the treatment provided to a given patient or at a given practice site. However, a single medical specialty designation for each professional in each group is required to categorize visits and services reported in the QRUR by provider stratification category. For the purposes of the QRUR, a medical professional's specialty is determined from 2012 Carrier claims based on the CMS specialty code listed most frequently on line items for services rendered by the professional. In the case of a tie, the specialty listed on the most recent claim is selected.

B. Grouping Medical Specialties into Physician and Provider Stratification Categories

Exhibit G.1 identifies which specialties are physician specialties, and the broad professional stratification categories to which each specialty is assigned. Specialty codes for which the provider stratification category is not applicable generally indicate non-medical professionals, such as facilities or medical supply companies.

Exhibit G.1. Physician Specialties and Professional Stratification Categories

Provider or Supplier Specialty Description	CMS Specialty Code	Eligible Professional?	Physician?	Provider Stratification Category
Primary Care Specialties				
Family Practice	08	Yes	Yes	Primary Care Physicians
General Practice	01	Yes	Yes	Primary Care Physicians
Geriatric Medicine	38	Yes	Yes	Primary Care Physicians
Internal Medicine	11	Yes	Yes	Primary Care Physicians
All Other Specialties				
Addiction Medicine	79	Yes	Yes	Medical Specialists
All Other Suppliers (e.g., Drug Stores)	87	No	No	Not Applicable
Allergy/Immunology	03	Yes	Yes	Medical Specialists
Ambulance Service Supplier (e.g., Private Ambulance Companies, Funeral Homes)	59	No	No	Not Applicable
Ambulatory Surgical Center	49	No	No	Not Applicable
Anesthesiologist Assistant	32	Yes	No	Other Eligible Professionals
Anesthesiology	05	Yes	Yes	Other Eligible Professionals
Audiologist (Billing Independently)	64	Yes	No	Other Eligible Professionals
Cardiac Electrophysiology	21	Yes	Yes	Medical Specialists
Cardiac Surgery	78	Yes	Yes	Surgeons
Cardiology	06	Yes	Yes	Medical Specialists
Certified Clinical Nurse Specialist	89	Yes	No	Other Eligible Professionals
Certified Nurse Midwife	42	Yes	No	Other Eligible Professionals
Certified Registered Nurse Anesthesiologist	43	Yes	No	Other Eligible Professionals
Chiropractor, Licensed	35	Yes	Yes	Other Eligible Professionals
Clinical Laboratory (Billing Independently)	69	No	No	Not Applicable
Clinical Psychologist	68	Yes	No	Other Eligible Professionals
Clinical Psychologist (Billing Independently)	62	Yes	No	Other Eligible Professionals
Colorectal Surgery (Formerly Proctology)	28	Yes	Yes	Surgeons
Critical Care (Intensivists)	81	Yes	Yes	Medical Specialists
Department Store (for DMERC Use)	A7	No	No	Not Applicable
Dermatology	07	Yes	Yes	Medical Specialists
Diagnostic Radiology	30	Yes	Yes	Other Eligible Professionals
Emergency Medicine	93	Yes	Yes	Other Eligible Professionals
Endocrinology	46	Yes	Yes	Medical Specialists

Exhibit G.1 *(continued)*

Provider or Supplier Specialty Description	CMS Specialty Code	Eligible Professional?	Physician?	Provider Stratification Category
Gastroenterology	10	Yes	Yes	Medical Specialists
General Surgery	02	Yes	Yes	Surgeons
Geriatric Psychiatry	27	Yes	Yes	Medical Specialists
Grocery Store (for DMERC Use)	A8	No	No	Not Applicable
Gynecologist/Oncologist	98	Yes	Yes	Surgeons
Hand Surgery	40	Yes	Yes	Surgeons
Hematology	82	Yes	Yes	Medical Specialists
Hematology/Oncology	83	Yes	Yes	Medical Specialists
Home Health Agency (DMERCs Only)	A4	No	No	Not Applicable
Hospice and Palliative Care	17	Yes	Yes	Medical Specialists
Hospital	A0	No	No	Not Applicable
Independent Diagnostic Testing Facility	47	No	No	Not Applicable
Individual Certified Orthotist	55	No	No	Not Applicable
Individual Certified Prosthetist	56	No	No	Not Applicable
Individual Certified Prosthetist-Orthotist	57	No	No	Not Applicable
Infectious Disease	44	Yes	Yes	Medical Specialists
Intensive Cardiac Rehabilitation	31	No	No	Not Applicable
Intermediate Care Nursing Facility (DMERCs Only)	A2	No	No	Not Applicable
Interventional Pain Management	09	Yes	Yes	Medical Specialists
Interventional Radiology	94	Yes	Yes	Other Eligible Professionals
Licensed Clinical Social Worker	80	Yes	No	Other Eligible Professionals
Mammography Screening Center	45	No	No	Not Applicable
Mass Immunization Roster Biller	73	No	No	Not Applicable
Maxillofacial Surgery	85	Yes	Yes	Surgeons
Medical Oncology	90	Yes	Yes	Medical Specialists
Medical Supply Company for DMERC	54	No	No	Not Applicable
Medical Supply Company with Certified Orthotist	51	No	No	Not Applicable
Medical Supply Company with Certified Prosthetist	52	No	No	Not Applicable
Medical Supply Company with Certified Prosthetist-Orthotist	53	No	No	Not Applicable
Medical Supply Company with Pedorthic Personnel	B3	No	No	Not Applicable
Medical Supply Company with Registered Pharmacist	58	No	No	Not Applicable

Exhibit G.1 *(continued)*

Provider or Supplier Specialty Description	CMS Specialty Code	Eligible Professional?	Physician?	Provider Stratification Category
Medical Supply Company with Respiratory Therapist (DMERCs Only)	A6	No	No	Not Applicable
Nephrology	39	Yes	Yes	Medical Specialists
Neurology	13	Yes	Yes	Medical Specialists
Neuropsychiatry	86	Yes	Yes	Medical Specialists
Neurosurgery	14	Yes	Yes	Surgeons
Nuclear Medicine	36	Yes	Yes	Other Eligible Professionals
Nurse Practitioner	50	Yes	Yes	Other Eligible Professionals
Nursing Facility, Other (DMERCs Only)	A3	No	No	Not Applicable
Obstetrics/Gynecology	16	Yes	Yes	Surgeons
Occupational Therapist (Independently Practicing)	67	Yes	No	Other Eligible Professionals
Ocularist	B5	No	No	Not Applicable
Ophthalmology	18	Yes	Yes	Surgeons
Optician	96	No	No	Not Applicable
Optometrist	41	Yes	Yes	Other Eligible Professionals
Oral Surgery (Dentists Only)	19	Yes	Yes	Surgeons
Orthopedic Surgery	20	Yes	Yes	Surgeons
Osteopathic Manipulative Therapy	12	Yes	Yes	Medical Specialists
Otolaryngology	04	Yes	Yes	Surgeons
Pain Management	72	Yes	Yes	Other Eligible Professionals
Pathology	22	Yes	Yes	Other Eligible Professionals
Pediatric Medicine	37	Yes	Yes	Other Eligible Professionals
Pedorthic Personnel	B2	No	No	Not Applicable
Peripheral Vascular Disease	76	Yes	Yes	Surgeons
Pharmacy (DMERCs Only)	A5	No	No	Not Applicable
Physical Medicine and Rehabilitation	25	Yes	Yes	Medical Specialists
Physical Therapist (Independently Practicing)	65	Yes	No	Other Eligible Professionals
Physician Assistant	97	Yes	No	Other Eligible Professionals
Plastic and Reconstructive Surgery	24	Yes	Yes	Surgeons
Podiatry	48	Yes	Yes	Other Eligible Professionals
Portable X-Ray Supplier	63	No	No	Not Applicable
Preventive Medicine	84	Yes	Yes	Medical Specialists
Psychiatry	26	Yes	Yes	Medical Specialists
Public Health or Welfare Agencies (Federal, State, and Local)	60	No	No	Not Applicable
Pulmonary Disease	29	Yes	Yes	Medical Specialists

Exhibit G.1 *(continued)*

Provider or Supplier Specialty Description	CMS Specialty Code	Eligible Professional?	Physician?	Provider Stratification Category
Radiation Oncology	92	Yes	Yes	Other Eligible Professionals
Radiation Therapy Centers	74	No	No	Not Applicable
Registered Dietician/Nutrition Professional	71	Yes	No	Other Eligible Professionals
Rehabilitation Agency	B4	No	No	Not Applicable
Rheumatology	66	Yes	Yes	Medical Specialists
Single or Multispecialty Clinic or Group Practice	70	Yes	Yes	Other Eligible Professionals
Skilled Nursing Facility	A1	No	No	Not Applicable
Sleep Medicine	C0	Yes	Yes	Medical Specialists
Slide Preparation Facilities	75	No	No	Not Applicable
Speech Language Pathologists	15	Yes	No	Other Eligible Professionals
Sports Medicine	23	Yes	Yes	Other Eligible Professionals
Surgical Oncology	91	Yes	Yes	Surgeons
Thoracic Surgery	33	Yes	Yes	Surgeons
Unassigned	95	No	No	Not Applicable
Unknown Physician	99	Yes	Yes	Other Eligible Professionals
Unknown Supplier/Provider	88	No	No	Not Applicable
Urology	34	Yes	Yes	Surgeons
Vascular Surgery	77	Yes	Yes	Surgeons
Voluntary Health or Charitable Agencies (e.g., National Cancer Society, National Heart Association, Catholic Charities)	61	No	No	Not Applicable

Source: 2012 Source for CMS Specialty Code: Medicare Claims Processing Manual, Chapter 26—Completing and Processing Form CMS-1500 Data Set (Rev. 2226, 5-20-11; Rev. 2261, 07-29-11; Rev. 2375, 12-22-11), 10.8.2—Physician Specialty Codes, (Rev. 2098, Issued: 11-19-10, Effective Date: 04-01-11, Implementation Date: 04-04-11), 10.8.3—Nonphysician Practitioner, Supplier, and Provider Specialty Codes, (Rev. 2248, Issued: 06-24-11, Effective: 04-01-11, Implementation: 04-04-11).

APPENDIX H
LIST OF ACRONYMS

ACO	Accountable Care Organization
ACSC	Ambulatory Care Sensitive Conditions
AHRQ	Agency for Healthcare Research and Quality
ASC	Ambulatory Surgical/Surgery Center
BETOS	Berenson-Eggers Type of Service
CAD	Coronary Artery Disease
CAH	Critical Access Hospital
CCW	Chronic Condition Data Warehouse
CMG	Case Mix Group
CMS	Centers for Medicare & Medicaid Services
CMS-CC	Centers for Medicare & Medicaid Services Condition Category
COLA	Cost of Living Adjustment
COPD	Chronic Obstructive Pulmonary Disease
DME	Durable Medical Equipment
DSH	Disproportionate Share Payments
DMEPOS	Durable Medical Equipment, Prosthetics, Orthotics, and Supplies
DMERC	Durable Medical Equipment Regional Carrier
DXG	Diagnosis Group
E&M	Evaluation and Management
ESRD	End-Stage Renal Disease
FFS	(Medicare) Fee-For-Service
GME	Graduate Medical Education
GPRO	Group Practice Reporting Option
HCC	Hierarchical Condition Category
HCPCS	Healthcare Common Procedure Coding System
HHRG	Home Health Resource Group
HMO	Health Maintenance Organization
ICD-9	International Classification of Diseases–9th Edition Clinical Modification
IDR	Integrated Data Repository
IME	Indirect Medical Education
IPF	Inpatient Psychiatric Facility
IPPS	Inpatient Prospective Payment System
IRF	Inpatient Rehabilitation Facility
LOS	Length of Stay
LTC-DRG	Long-Term Care Diagnosis-Related Groups

LTCH	Long-Term Care Hospital
LUPA	Low Utilization Payment Adjustment
MAC	Medicare Administrative Contractor
NPI	National Provider Identifier
OPPS	Outpatient Prospective Payment System
PCP	Primary Care Physician (or Provider)
PQI	Prevention Quality Indicator
PQRS	Physician Quality Reporting System
QRUR	Quality and Resource Use Report
SNF	Skilled Nursing Facility
TIN	Taxpayer Identification Number
RUG	Resource Utilization Group
RVU	Relative Value Units
VBM	Value-Based Payment Modifier