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The Physician Group Practice Transition Demonstration
Bonus Methodology Specifications

Report

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EXECUTIVE SUMMARY

This report describes the specifications for the bonus calculations of the Physician Group Practice Transition Demonstration (PGP TD). The PGP TD is a 2-year Demonstration that will: (1) provide CMS with additional performance data and insight into the sustainability of results to consider when designing and refining the Medicare Shared Savings Accountable Care Organization (ACO) Program (MSSP) that is mandated in section 3022 of the Affordable Care Act, (2) continue a successful Demonstration (the initial PGP Demonstration) and provide additional opportunities for groups to generate shareable savings for the Medicare Trust Funds, and (3) provide CMS the opportunity to test additional quality measures using a methodology that encourages continual improvement. At the end of the demonstration, the PGPs will be given the opportunity to transition into the MSSP or an initiative in the Center for Medicare and Medicaid Innovation**.**

Beneficiary Assignment: The PGP TD will continue to utilize retrospective beneficiary assignment. PGPs will have the option to elect to use a methodology that involves two stages or the initial PGP methodology that involves one stage. Patients will be assigned to the physician group's tax identification numbers using either: (1) the new two-stage primary care services Evaluation & Management (E&M) code algorithm that assigns based on (a) primary care specialties first and then (b) all specialties second for patients without a primary care visit; or (2) the current office and other outpatient service E&M algorithm regardless of specialty.

Baseline and Target: The baseline expenditures will be an average of risk-adjusted Parts A and B per capita expenditures for beneficiaries assigned to the physician group using the selected beneficiary assignment methodology in the three years prior to the start of the agreement performance period. A credibility weighting will be applied to the baseline such that the most recent year will be weighted 60 percent, the next year weighted 30 percent, and the earliest year weighted 10 percent. The per capita amounts will be trended forward based on the national average growth rate in Parts A and B per capita expenditures provided by the CMS Office of the Actuary (OACT). The target expenditure for each performance year will be the group's baseline expenditure amount plus the absolute per capita dollar equivalent of national FFS expenditure growth from the base period to the performance year. The national FFS expenditure increment will be provided by OACT and will be risk-adjusted by the site-specific annual average risk score.

Risk Adjustment: The CMS-Hierarchical Conditions Category (CMS-HCC) prospective risk adjustment models will be used to calculate beneficiary risk scores. Prospective risk adjustment uses prior year diagnoses to risk adjust current year's expenditures. The CMS-HCC risk scores will be adjusted for coding pattern changes. First, the normalized risk scores will be used to adjust for year-to-year FFS coding pattern changes. Each year's FFS normalization factor will be the factor as published by CMS in the Medicare Advantage Final Notice. Second, a $\pm$ 0.4 cap will be placed on the annual risk score growth during the performance years. For the

PGP TD, we will apply a cap of $\pm$ 0.4 percent relative to the base year for the first performance year and $\pm$ 0.8 percent relative to the base year for the second performance year.

Minimum Savings Requirement: The shared savings methodology will include a sliding scale to define the minimum savings requirement (MSR) based on the number of assigned beneficiaries. The MSR is calculated to produce a 95-percent (one-sided: bonuses) or 90-percent (two-sided: bonuses and losses) confidence interval for demonstration savings (target minus actual performance year expenditures).

Shared Savings: Groups that exceed the MSR will be eligible to share 50 percent of the difference of target minus actual expenditures. The total performance payments earned will be based on performance on the quality measures and cost efficiency, with the percent based on quality equal to 80 percent in year 1 and 90 percent in year 2. A 25-percent portion of any earned performance payments will be withheld until the end of the two-year performance period. If a PGP has target minus actual expenditures less than the negative of the MSR, the accrued loss for that performance year will be equal to 50 percent of target minus actual expenditures. Shared savings payments will be capped at 5 percent of total target expenditures.

SECTION 1
INTRODUCTION

The Physician Group Practice Transition Demonstration (PGP TD) rewards large physician groups for improving the quality and cost efficiency of care. The initial Demonstration completed its fifth and final performance year on March 31, 2010. The Affordable Care Act, sections 3022 and 10308, authorizes the Secretary to enter into a shared savings agreement with the organizations participating in the PGP Demonstration. The Centers for Medicare & Medicaid Services (CMS) has worked with the participating organizations to revise the Demonstration terms and conditions to operate the Demonstration for 2 additional years beginning on January 1, 2011. A 2-year Demonstration, termed the PGP TD, will: (1) provide CMS with additional performance data and insight into the sustainability of results to consider when designing and refining the Medicare Shared Savings Accountable Care Organization (ACO) Program (MSSP) that is mandated in section 3022 of the Affordable Care Act, (2) continue a successful Demonstration and provide additional opportunities for groups to generate shareable savings for the Medicare Trust Funds, and (3) provide CMS the opportunity to test additional quality measures using a methodology that encourages continual improvement. At the end of the demonstration, the PGPs will be given the opportunity to transition into the MSSP or an initiative in the Center for Medicare and Medicaid Innovation**.**

The timeline for the PGP TD will be:

- Three Base Years: January 1, 2008 – December 31, 2010
- Performance Year One: January 1, 2011 – December 31, 2011
- Performance Year Two: January 1, 2012 – December 31, 2012

The rest of this Section includes an overview of the process of calculating the bonus payments. More detailed specifications are included in the following Sections.

The first step in calculating the bonus payments involves calculating whether or not a PGP generated annual Medicare cost savings greater than the minimum savings requirement (MSR). The shared savings methodology will include a sliding scale to define the MSR based on the number of assigned beneficiaries. The MSR is calculated to produce a 95-percent (one-sided: bonuses) or 90-percent (two-sided: bonuses and losses) confidence interval for demonstration savings (target minus actual performance year expenditures). A 95-percent confidence interval means that only 5 percent of the time will a bonus be paid due to normal claims fluctuations ("random chance") without any cost-savings behavior on the part of the participating PGP. The MSR is calculated by a statistical formula that accounts for the size of the participating PGP, measured in terms of number of assigned beneficiaries, in each of the 3 base years and in 1 performance year. The other input that determines the MSR is the coefficient of variation (CV) of expenditures. The MSR scale uses a national CV with expenditures truncated at the 99th percentile and adjusted for risk.

The baseline expenditures will be an average of risk-adjusted Parts A and B per capita expenditures for beneficiaries assigned to the physician group using the selected beneficiary

assignment methodology in the three years prior to the start of the agreement period. A credibility weighting will be applied to the baseline such that the most recent year will be weighted 60 percent, the next year weighted 30 percent, and the earliest year weighted 10 percent. The per capita amounts will be trended forward based on the national average growth rate in Parts A and B per capita expenditures provided by the CMS Office of the Actuary (OACT). The target expenditure for each performance year will be the group's baseline expenditure amount plus the absolute per capita dollar equivalent of national FFS expenditure growth from the base period to the performance year. The national FFS expenditure increment will be provided by OACT and will be risk-adjusted by the site-specific annual average risk score.

Groups that exceed the MSR will be eligible to share 50 percent of the difference of target minus actual expenditures. The total performance payments earned will be based on performance on the quality measures and cost efficiency, with the percent based on quality equal to 80 percent in year 1 and 90 percent in year 2. A 25-percent portion of any earned performance payments will be withheld until the end of the two-year performance period. If a PGP has target minus actual expenditures less than the negative of the MSR, the accrued loss for that performance year will be equal to 50 percent of target minus actual expenditures. Shared savings payments will be capped at 5 percent of total target expenditures.

The following Sections of this report describe these procedures and the underlying programming methods in more detail. The Medicare data files that provide the data used to calculate the PGP bonus payments are described in Section 2. The method for assigning beneficiaries to a PGP is presented in Section 3. Section 4 explains the per capita expenditures and the use of risk adjustment to account for casemix changes between years. Section 5 provides information on the minimum savings requirement. Finally, Section 6 provides additional details on how PGP bonus payments are calculated.

SECTION 2
MEDICARE DATA USED TO CALCULATE BONUS PAYMENTS

This Section describes the Medicare data RTI uses to calculate the bonus payments for each physician group practice (PGP) participating in the demonstration. Two main Medicare data sources are used: the Medicare enrollment files (including the Enrollment Data Base [EDB] and the Denominator File), and the National Claims History files (NCH claims). These Medicare data sources are described in Section 2.1. RTI will work within CMS system constraints to expeditiously process data and calculate bonus payments for the Demonstration. Assuming timely data availability from the CMS data center, these system constraints will result in an estimated time delay of up to one year between the end of a performance year and the completion of bonus payment calculations for that performance year. Acquiring and processing data for bonus payment calculations is discussed in Section 2.2.

2.1 Data Files Used in Demonstration

Two main Medicare data sources are used to calculate bonus payments for the demonstration. The Medicare enrollment files are described in Section 2.1.1, and the NCH claims files in Section 2.1.2.

2.1.1 Medicare Enrollment Files

The Medicare enrollment files contain enrollment information for all beneficiaries ever entitled to Medicare, including demographic information, enrollment dates, third party buy-in information, and Medicare managed care enrollment.

2.1.2 National Claims History Files

The NCH claims files contain all of the claims for beneficiaries in Medicare fee for service. There are seven components of NCH claims files: Inpatient; Hospital Outpatient; Physician/Supplier Part B; Skilled Nursing Facility (SNF); Home Health Agency (HHA); Durable Medical Equipment (DME); and Hospice. Claims for a given time period are ninety-eight percent complete six months after the end of that time period. NCH files are obtained from CMS through the Data Extract System (DESY). Once a request for claims is completed by DESY, RTI receives two data files. One contains all claims considered complete by Medicare and the other contains all intermediary claims (those submitted in error and claims subsequently submitted to cancel out the incorrect claims). RTI uses only the file of complete claims for calculation of bonus payments for the demonstration. For a given year, NCH claims will be restricted to claims with a claim "through date" during that year.

2.2 Acquiring and Processing Demonstration Data

There are several data steps involved in calculating bonus payments for the demonstration. This Section describes the major steps from a data processing standpoint. Before any of the data processing can begin, the claims files used to calculate beneficiary expenditures must accumulate at the CMS data center. Assuming no delays, the claims data files for a year are ninety-eight percent complete six months after the end of the year. Therefore, for each performance year in the demonstration, RTI estimates that data steps for acquiring and processing demonstration data will begin six months after the end of the performance year. After

the end of a performance year, RTI must wait six months for claims data files to become complete. After waiting these six months, the major data steps involved in acquiring and processing data for calculating bonus payments begins. The major steps in acquiring and processing data are described below.

The data steps involve three separate DESY data pulls, each of which can take from a few weeks to a few months. Assuming timely data availability from the CMS data center, RTI estimates that acquiring and processing data for bonus payment calculations to be completed in six months. Thus, assuming timely data availability from the CMS data center, RTI estimates a time delay of up to one year between the end of a performance year and the completion of bonus payment calculations for that performance year.

Step 1: DESY pull of all Part B claims for Employer Identification Number(s) (EINs) of PGP.

Step 2: Pull Beneficiary Claim Account Numbers (HICNs) from Part B claims returned by DESY. Create a finder file of these HICNs.

Step 3: DESY pull of all Medicare claims for all beneficiaries with at least one claim at the PGP. Pull information from the Medicare Enrollment Files for beneficiaries who had a Part B claim at the PGP.

Step 4a: Assign beneficiaries to PGP. Pull HICNs of beneficiaries from the Denominator file.

Create a finder file of these HICNs.

Step 4b: Calculate PGP base years/performance year per capita expenditures and mean risk score, and risk adjusted per capita expenditures based on prospective risk scores.

Step 5: Calculate PGP bonus payment, if any, using the National FFS expenditure increment provided by the CMS Office of the Actuary.

SECTION 3
BENEFICIARY ASSIGNMENT

The first step in calculating physician group practice (PGP) bonus payments is to determine which beneficiaries are assigned to the PGP. Beneficiary assignment is determined in the base years of the demonstration and then re-determined in each of the performance years. Thus, a beneficiary assigned in one year of the demonstration may or may not be assigned in the following or preceding years. This chapter describes the new two-stage assignment methodology developed for the PGP TD. PGPs participating in the PGP TD have the choice of selecting the new two-stage assignment method, or the one-stage assignment method used in the initial version of the PGP Demonstration, which is described in the Methodology Specifications for the initial version.

3.1 Assignment Criteria

The goal of the beneficiary assignment criteria is to identify Medicare beneficiaries that had the plurality of their allowed charges for Evaluation and Management (E&M) services with a primary care physician at a participating PGP during the year. If they did not have any primary care physician visits, then they are assigned using plurality of allowed charges for all E&M visits regardless of specialty. To ensure this, we exclude any beneficiaries for whom we do not have a complete set of Part A and B claims. For each year, a beneficiary will be assigned to a participating PGP if the following PGP beneficiary assignment criteria are satisfied:

A) Beneficiary must have a record in the Medicare Enrollment Files
The Medicare Enrollment Files contain information about the beneficiary's Medicare enrollment status and other information which is needed to determine if the beneficiary meets other criteria below.

B) Beneficiary must have at least one month of Part A and Part B enrollment, and cannot have any months of Part A only or Part B only enrollment
Because the purpose of this demonstration is to align incentives between Part A and Part B, beneficiaries are not included who only have coverage for one of these parts.

C) Beneficiary cannot have any months of Medicare managed care enrollment
Only beneficiaries enrolled in Medicare fee-for-service are eligible for the demonstration.

D) Beneficiary cannot be Medicare Secondary Payer (MSP)
Medicare may not have a complete set of claims for MSP beneficiaries because it is not the primary payer.

E) Beneficiary must reside in the United States
This criterion excludes beneficiaries who might have received care outside of the United States for whom claims are not available.

F) Beneficiary must have a prospective risk score in the relevant CMS file.
Prospective risk adjustment is used in the demonstration to adjust for changes in

assigned beneficiary risk. If a beneficiary does not have a CMS-calculated prospective risk score, he or she will be excluded.

G) Beneficiary must have the largest share of his/her E&M services provided by the participating PGP, as specified below:

If a beneficiary has an E&M service with a primary care physician at any practice (EIN/tax ID), then the beneficiary is assigned to the PGP if he or she has at least one E&M service with a primary care physician at the participating PGP, and more E&M services with primary care physicians (measured by Medicare allowed charges) at the participating PGP than at any other physician practice (EIN/tax ID).

If a beneficiary does not have any primary care physician visits at any physician practice, then the beneficiary is assigned to the participating PGP if he or she has at least one E&M service at the participating PGP (any specialty), and more E&M services (measured by Medicare allowed charges) at the participating PGP than at any other physician practice (EIN/tax ID).

In general, a beneficiary is assigned to a PGP based on largest share of E&M services by a primary care physician because primary care physicians are primarily responsible for the care of that beneficiary and it is preferred to assign them to the practice providing the most primary care. But if a beneficiary is not receiving E&M services from any primary care physicians, we still want to assign them to a practice, as this recognizes that some beneficiaries may receive primary care from specialists, or may not be receiving primary care at all.

Note that PGPs may choose the assignment method described above or may choose to stay with the assignment methodology used in the initial PGP Demonstration. In this case, the beneficiary is assigned to the participating PGP if he or she has at least one E&M service at the participating PGP (any specialty), and more E&M services (measured by Medicare allowed charges) at the participating PGP than at any other physician practice (EIN/tax ID).

3.2 Steps in Assigning Beneficiaries to PGPs

There are seven steps involved in assigning beneficiaries to a PGP. The first three steps involve identifying beneficiaries with a Part B claim at a participating PGP and obtaining claims, enrollment and demographic information for these beneficiaries. These three steps are outlined in detail below.

Step 1: RTI computer programmer uses participating PGP's Employer Identification Numbers (EINs/tax IDs) to submit a CMS Data Extract System (DESY) run for all Part B National Claims History (NCH) file claims with an EIN from the PGP. A participating PGP's EINs will be used each year to identify beneficiaries that had a Part B claim at the PGP. An RTI

programmer submits the participant's EINs in a DESY request of all Part B claims for those EINs.[1]

Step 2: Identify Beneficiary Health Insurance Claim Number (HICN) of all beneficiaries who had a Part B claim at the PGP. Once the DESY run is completed, RTI pulls the HICNs from the Part B claims for the PGP. This list of HICNs is all beneficiaries who had a Part B claim at the participating PGP within the year.

Step 3a: Pull NCH claims for beneficiaries who had any Part B claim at the PGP. RTI submits the HICNs from the Part B claims to DESY to pull all of the Inpatient, SNF, Outpatient, Physician/Supplier Part B, DME, Hospice, and HHA claims for beneficiaries who had a Part B claim at the PGP within the year. This pull includes all claims from any provider, not just those from the participating PGP.

Step 3b: Pull information from the Medicare Enrollment Files for beneficiaries who had a Part B claim at the PGP. RTI pulls primary payer code and other enrollment information from the Medicare enrollment files for all beneficiaries who had a Part B claim at the PGP.

3.3 Beneficiary Allowed Charge Calculation

As discussed in detail in Section 3.1, a beneficiary is assigned to the participating PGP if he or she has at least one E&M service with a primary care physician at the participating PGP, and more E&M services (measured by Medicare allowed charges) with primary care physicians at the participating PGP than at any other physician practice (EIN/tax ID). If a beneficiary does not have any primary care physician visits, then the beneficiary is assigned to the PGP if he or she has at least one E&M service at a participating PGP (any specialty), and more E&M services (measured by Medicare allowed charges) at the participating PGP than at any other physician practice (EIN/tax ID).

Step 4: Sum allowed charges by HICN and EIN. RTI sums E&M allowed charges for each beneficiary at each Part B provider, as identified by EIN. E&M charges are identified by the "Line HCPCS Code" on the claim. For a list of the categories of E&M codes that are included in assignment, see ***Table 3-1***. Allowed charges are used for assignment because, unlike expenditures, they include the Medicare deductible, the first dollars of Medicare Part B payments by a beneficiary within the year (e.g., $155 in 2010). By using allowed charges rather than expenditures, we are able to assign some low utilization beneficiaries who would not have been assigned by expenditures because they never exceeded the dollar deductible.

RTI also sums all Part B allowed charges for each beneficiary at each provider as identified by EIN. The same exclusions are made as above, except that allowed charges with any "Line HCPCS Code" are included in the total. Total Part B allowed charges are used in the

[1] If a participating PGP specified select National Provider Identifiers (NPIs) to be included in the Demonstration, then the PGP's EINs in combination with the selected NPIs would be used to identify beneficiaries that had a Part B claim at the PGP.

assignment as a tiebreaker when a beneficiary has the same E&M allowed charges at two or more physician practices.

Step 5: Create beneficiary level file with flag for assignment based on allowed charges. RTI first looks at those beneficiaries with any E&M allowed charges at a primary care physician at the various physician practices that he or she visited within the year. Specialty codes for primary care physicians are listed in ***Table 3-2***. Of those beneficiaries, if the EIN with the greatest E&M allowed charges with a primary care physician is the PGP, the beneficiary is flagged as meeting the "plurality of E&M allowed charges" criterion.

If two physician practices (defined by EIN numbers) have provided the same level of E&M services at a primary care physician to a beneficiary, RTI compares the level of all (any specialty) E&M services (allowed charges) at the two practices. The beneficiary is then flagged as meeting the "plurality of E&M allowed charges" criterion at the practice with the greater E&M services. If this does not break the "tie," then this algorithm is repeated replacing all E&M services with all Part B services (allowed charges).

The RTI programmer creates a new file with one record for each beneficiary with a flag to show if the beneficiary had more E&M allowed charges with a primary care physician at the PGP than at any other physician practice, and a variable containing the EIN(s) of the practice with the greatest E&M allowed charges.

Step 6: RTI then looks at those beneficiaries with no E&M allowed charges with a primary care physician at any physician practice that he or she visited within the year. RTI compares the E&M allowed charges (any specialty) of each beneficiary at various physician practices that he or she visited within the year. If the EIN with the greatest E&M allowed charges for the beneficiary is the PGP, the beneficiary is flagged as meeting the "plurality of E&M allowed charges" criterion.

If two physician practices (defined by EIN numbers) have provided the same level of E&M services to a beneficiary, RTI compares the level of Part B services (allowed charges) at the two practices. The beneficiary is then flagged as meeting the "plurality of E&M allowed charges" criterion at the practice with the greater Part B allowed charges.

The RTI programmer creates a new file with one record for each beneficiary with a flag to show if the beneficiary had more E&M allowed charges at the PGP than at any other physician practice, and a variable containing the EIN(s) of the practice with the greatest E&M allowed charges.

Table 3-1
Evaluation & Management Service Codes Included in Beneficiary Assignment Criteria

Office or Other Outpatient Services
99201 New Patient, brief
99202 New Patient, limited
99203 New Patient, moderate
99204 New Patient, comprehensive
99205 New Patient, extensive
99211 Established Patient, brief
99212 Established Patient, limited
99213 Established Patient, moderate
99214 Established Patient, comprehensive
99215 Established Patient, extensive
Initial Nursing Facility Care
99304 New or Established Patient, brief
99305 New or Established Patient, moderate
99306 New or Established Patient, comprehensive
Subsequent Nursing Facility Care
99307 New or Established Patient, brief
99308 New or Established Patient, limited
99309 New or Established Patient, comprehensive
99310 New or Established Patient, extensive
Nursing Facility Discharge Services
99315 New or Established Patient, brief
99316 New or Established Patient, comprehensive
Other Nursing Facility Services
99318 New or Established Patient
Domiciliary, Rest Home, or Custodial Care Services
99324 New Patient, brief
99325 New Patient, limited
99326 New Patient, moderate
99327 New Patient, comprehensive
99328 New Patient, extensive
99334 Established Patient, brief
99335 Established Patient, moderate
99336 Established Patient, comprehensive
99337 Established Patient, extensive

(continued)

Table 3-1
Evaluation & Management Service Codes Included in Beneficiary Assignment Criteria (continued)

Domiciliary, Rest Home, or Home Care Plan Oversight Services
99339, brief
99340, comprehensive
Home Services
99341 New Patient, brief
99342 New Patient, limited
99343 New Patient, moderate
99344 New Patient, comprehensive
99345 New Patient, extensive
99347 Established Patient, brief
99348 Established Patient, moderate
99349 Established Patient, comprehensive
99350 Established Patient, extensive
Wellness Visits
G0402 Welcome to Medicare visit
G0438 Annual wellness visit
G0439 Annual wellness visit

Table 3-2
Specialty Codes for Primary Care Physicians

1 (general practice)
8 (family practice)
11 (internal medicine)
38 (geriatric medicine)

3.4 Completing Assignment

In addition to meeting criterion G), "the plurality of E&M allowed charges," for assignment to the PGP, a beneficiary must meet several additional assignment criteria. The variables used to determine which beneficiaries meet the additional criteria are listed below.

Step 7: Identify which beneficiaries meet the remaining assignment criteria and create assignment flags. For all beneficiaries who were flagged in the above criteria, the following list describes which variables are used to identify beneficiaries who meet the other criteria, A) through G):

A) Beneficiary must have a record in the Medicare Enrollment Files
Beneficiaries are identified in these files by their Health Insurance Claim number (HICN).

B) Beneficiary must have at least one month of Part A and Part B enrollment, and cannot have any months of Part A only or Part B only enrollment
Beneficiaries are excluded from assignment if the Medicare Entitlement/Buy-in Indicator is not 3 or C (Part A and Part B; or Parts A and B, State Buy-In) for all months of Medicare enrollment.

C) Beneficiary cannot have any months of Medicare managed care enrollment
Beneficiaries cannot have a Medicare managed care enrollment period that indicates one or more months of Medicare managed care enrollment during the year.

D) Beneficiary cannot be Medicare Secondary Payer (MSP)
Beneficiaries are excluded if Primary Payer Code is equal to A or G (Working Aged or Working Disabled) for any month of the year. This excludes beneficiaries for whom a private group health insurance plan was the primary payer instead of Medicare.

E) Beneficiary must reside in the United States
Beneficiaries with a State Code that is greater than 53 in the Denominator file are excluded from assignment. State Codes 01-53 include the fifty states, District of Columbia, U.S. Virgin Islands, and Puerto Rico.

SECTION 4
PGP PER CAPITA EXPENDITURE AND RISK ADJUSTMENT

This Section describes how per capita expenditures, risk scores, and adjusted per capita expenditures are calculated for a participating PGP. This process begins once the beneficiary assignment is completed, as described in Section 3. These calculations are done separately for the base years and each performance year. There are three basic steps in calculating risk adjusted expenditures: calculating total Medicare expenditures for each beneficiary assigned to the PGP, Section 4.1; annualizing each assigned beneficiary's expenditures, Section 4.2; and calculating weighted mean annualized expenditures for the PGP's assigned beneficiaries, Section 4.3. Section 4.4 and 4.5 describe how the risk adjuster, i.e., risk scores, is used for the PGP.

4.1 Calculating PGP Assigned Beneficiary Expenditures

After PGP beneficiary assignment is completed, expenditures are calculated for PGP assigned beneficiaries. This Section describes the first step in this process, step 1a.

Step 1a: Calculate total Medicare expenditures for each beneficiary assigned to the PGP. For each beneficiary assigned to the PGP, RTI will calculate total Medicare expenditures from the Inpatient, Skilled Nursing Facility (SNF), Outpatient, Physician/Supplier Part B, Durable Medical Equipment (DME), Home Health Agency (HHA), and Hospice claims. To calculate total Medicare expenditures for each beneficiary, RTI sums expenditures from all of the beneficiary's Inpatient, SNF, Outpatient, Part B, DME, HHA, and Hospice claims at any provider. Denied payments and line items are excluded from the calculation. A list of the variables used to determine the expenditure amount, claim through date, and denied line items or claims are shown for the various claims in ***Table 4-1***.

4.2 Annualizing and Capping PGP Assigned Beneficiary Expenditures

After PGP assigned beneficiary expenditures are summed, RTI annualizes the expenditures by dividing them by the fraction of months in the year each beneficiary was enrolled in Medicare. All further analyses weight the annualized expenditures by this same fraction. Annualization and weighting ensures that payments are correctly adjusted for months of beneficiary eligibility, including new Medicare enrollees and people who died.

To annualize beneficiary expenditures, RTI first calculates the fraction of the year that a beneficiary is enrolled in Medicare. RTI then divides each beneficiary's expenditures by this fraction.

Step 1b: Calculate the fraction of the year that each assigned beneficiary is enrolled in Medicare. In this step RTI first calculates the number of months that the beneficiary is enrolled in Medicare Parts A and B. A beneficiary is enrolled in Medicare Parts A and B when the Medicare entitlement/Buy-in Indicator for the month in the Medicare enrollment files is equal to 3 or C. RTI then takes the number of months that the beneficiary is enrolled in Medicare

Table 4-1
Variables Used in Total Beneficiary Expenditure Calculations

	Payment is equal to:	Claim denied if:	Line Item Denied if:	Through Date
SNF	Claim Payment Amount	Any value for 'Claim Medicare Non-Payment reason code'	No exclusion	Claim Through Date
Inpatient	Claim Payment Amount + Claim Utilization Day Count Per Diem	Any value for 'Claim Medicare Non-Payment reason code'	No exclusion	Claim Through Date
Outpatient	Claim Payment Amount	Any value for 'Claim Medicare Non-Payment reason code'	No exclusion	Claim Through Date
Home Health	Claim Payment Amount	Any value for 'Claim Medicare Non-Payment reason code'	No exclusion	Claim Through Date
Physician/Supplier Part B	Line NCH Payment Amount	'Carrier Claim Payment Denial Code' = 0 or D through Y	Line Processing Indicator Code ≠ A, R, or S	Line Through Date
DME	Line NCH Payment Amount	'Carrier Claim Payment Denial Code' = 0 or D through Y	Line Processing Indicator Code ≠ A, R, or S	Line Through Date
Hospice	Claim Payment Amount	Any value for 'Claim Medicare Non-Payment reason code'	No exclusion	Claim Through Date

and divides it by 12 (the number of months in the year). This fraction will be used to annualize beneficiary expenditures in the next step. When RTI sums the fraction of the year enrolled in Medicare for all the beneficiaries assigned to the PGP, the result is the total "person years" for the PGP's assigned beneficiaries within the year. Person-years is used to calculate the PGP's bonus payment, if any.

Step 2a: Calculate annualized expenditures for each beneficiary assigned to the PGP and cap annualized expenditures. To annualize a beneficiary's expenditures, RTI divides the total expenditures for the beneficiary by the fraction of the year the beneficiary is enrolled in Medicare.

Step 2b: Cap annualized expenditures. All annualized expenditures will then be capped by setting those greater than a threshold equal to the threshold. This is to prevent a small number of extremely costly beneficiaries from significantly affecting the PGP's per capita expenditures. For beneficiaries entitled by age or disability, the threshold will be the national 99th percentile of annualized expenditures for beneficiaries satisfying the eligibility requirements of the demonstration (e.g., beneficiaries must have at least one qualifying evaluation and management visit). The most recent available national data will be used to determine the 99th percentile. Beneficiaries entitled by ESRD are much more expensive, on average, than aged/disabled beneficiaries. A higher expenditure threshold is appropriate for ESRD beneficiaries. But the 99th percentile of their expenditure distribution is quite high (e.g., $400,000). A threshold that high could cause instability in mean expenditures. Instead of the 99th percentile, for ESRD beneficiaries we will use a threshold that creates the same "exposure" above group mean expenditures before capping as for the aged/disabled population.[2] For example, if aged/disabled mean expenditures are $10,000 and their 99th percentile cap is $100,000, the exposure between the mean and the cap equals $100,000 minus $10,000 or $90,000. This same exposure is added to the ESRD mean to determine the ESRD cap. If the ESRD mean expenditures were $70,000, the ESRD cap equals $70,000 + $90,000 = $160,000.

In the next step, the mean annualized expenditures, weighted by the fraction of the year each beneficiary is enrolled in Medicare, are calculated for the PGP.

4.3 PGP Per Capita Expenditures for Assigned Beneficiaries

Once expenditures have been annualized for each assigned beneficiary, weighted mean annualized expenditures are calculated, yielding per capita expenditures for the PGP. Beneficiary expenditures are weighted by the fraction of the year the beneficiary is enrolled in Medicare, so beneficiaries for whom we have less than a year's worth of expenditures do not contribute equally to PGP per capita expenditures as beneficiaries for whom we do have a full year of expenditure data.

Step 3a: Calculate weighted average of capped annualized expenditures for the PGP, weighting by fraction of the year that each beneficiary is enrolled in Medicare. RTI calculates the per capita expenditures for the PGP according to the following logic. Annualized Medicare

[2] In a risk-bearing context, the "exposure" can be thought of as a "deductible" before the "reinsurance" threshold cap is reached.

expenditures are calculated for each beneficiary, and multiplied by each beneficiary's fraction of the year enrolled in Medicare. For example, a beneficiary with $2,500 annualized expenditures enrolled for 6 months is assigned a value of $1,250. This value is then summed across all beneficiaries assigned to the PGP, and divided by the total number of person years assigned to the PGP. The beneficiary above would count as half of a person year for purposes of this calculation. The PGP per capita expenditures, and the PGP risk score calculated in Section 4.4, are input into an 'accounting model' to calculate bonus payments.

4.4 CMS-HCC Prospective Risk Adjustment Models

For the PGP TD, the CMS-HCC prospective risk adjustment models will be used to calculate beneficiary risk scores. Prospective risk adjustment uses prior year diagnoses to risk adjust current year's expenditures. Compared to concurrent risk adjustment models, the weights in prospective risk adjustment models are higher on chronic conditions relative to acute conditions. In addition, the demographic factors (age, sex, Medicaid, originally disabled) are a bigger component in prospective risk scores than in concurrent.

The CMS-HCC prospective risk adjustment models are maintained by CMS for the Medicare Advantage (MA) program (the models are not customized for the PGP demonstration). CMS also calculates CMS-HCC risk scores for all Medicare beneficiaries, including fee-for-service beneficiaries. There are separate models for Aged/Disabled beneficiaries, including models for community-residing beneficiaries, long-term institutional beneficiaries, new Medicare enrollees, and functioning graft (post-kidney-transplant) beneficiaries. In addition to Aged/Disabled models, there are separate models for ESRD beneficiaries, including models for dialysis beneficiaries and transplant beneficiaries.

4.5 Adjustments for Diagnostic Coding Pattern Changes

The goal of risk adjustment for the PGP TD is to measure true health status changes over time between the PGP and its national fee-for-service (FFS) comparison population. However, diagnosis-based risk scores are also affected by changes in diagnostic coding patterns over time. Although prospective scores are less affected than concurrent scores because of the bigger demographic component, they are still affected by coding pattern changes.

For the PGP TD, the CMS-HCC risk scores will be adjusted for coding pattern changes. Two adjustments will be made, one for FFS coding pattern changes and a risk score cap on PGP risk score growth.

4.5.1 Fee-For-Service (FFS) Normalization

The CMS-HCC risk adjustment models are calibrated on FFS data. An upward trend in FFS diagnostic coding results in average risk scores that are greater than 1.0 after the MA risk adjustment model calibration year. Changes in diagnostic coding over time can be a result of more specific coding, increased illness, or more severe manifestations of illness. In order to keep the average risk score at 1.0 for the national Medicare FFS population, risk scores are adjusted for these changes in FFS coding patterns using a FFS normalization factor. Each year's FFS normalization factor is published by CMS in the MA Final Notice. The PGP TD will use the same FFS normalization factors as used in the MA program.

4.5.2 PGP Risk Score Growth Cap

A cap will be placed on the annual risk score growth during the performance years only. For the PGP TD, we will apply a cap of $\pm$ 0.4 percent for the first performance year and $\pm$ 0.8 percent for the second performance year.

For example, if a PGP's average aged baseline risk score is equal to 1.055, then the maximum aged PY1 risk score would be equal to 1.059 and the minimum aged PY1 risk score would be equal to 1.051. The maximum aged PY2 risk score would be equal to 1.063 and the minimum aged PY2 risk score would be equal to 1.047.

The risk-adjusted national increment must also reflect the cap (upper/lower bounds) on the risk ratio. Therefore, for those risk ratios that were capped, the cap will be reflected in the risk scores used to risk adjust the national increment.

SECTION 5
MINIMUM SAVINGS REQUIREMENT

The PGP TD requires a minimum savings requirement (MSR) when calculating shared savings payment, and requires that it vary based on the number of the PGP's assigned patients. It is well known that there is "normal" (random) variation in the incidence and severity of illness in patient populations, and thus random variation in medical expenditures. The random variation in annual per capita medical care expenditures (claims costs) for the patients assigned to a PGP creates an uncertainty in determining savings. The question is whether observed (measured) savings are the result of true cost control on the part of the PGP, or the result of random fluctuations in medical expenditures. The MSR is designed to provide a level of confidence that we are rewarding true cost savings (efficiency) on the part of the PGP rather than paying for random expenditure fluctuations.

The MSR is calculated to produce a 95-percent (one-sided: bonuses) or 90-percent (two-sided: bonuses and losses) confidence interval for Demonstration savings (target minus actual performance year expenditures). A 95-percent confidence interval means that only 5 percent of the time will a bonus be paid due to normal claims fluctuations ("random chance") without any cost-savings behavior on the part of the participating PGP. The MSR is calculated by a statistical formula (described below) that accounts for the size of the participating PGP, measured in terms of number of assigned beneficiaries, in each of the 3 base years and in 1 performance year. The other input that determines the MSR is the coefficient of variation (CV) of expenditures.

We used a national CV calculated from the Medicare 5% beneficiary sample with annualized expenditures capped at the 99th percentile (about $100,000) and adjusted for prospective CMS-HCC risk scores. The beneficiary sample for the CV calculation was subsetted by the PGP Demonstration eligibility criteria—in particular, sample beneficiaries had to have at least one qualifying evaluation and management visit, non-users were excluded. The calculated CV is 1.73.

5.1 Derivation of Minimum Savings Requirement

Savings = Target Expenditures - Assigned Beneficiary Expenditures = T - A.

T = performance year benchmark

A = performance year assigned beneficiary expenditures

Both target and actual expenditures are per capita.

The Target T equals the baseline plus the national expenditure increment. We assume that the national expenditure increment has no variance. The baseline is the average of the 3 trended base year expenditure means. We assume that the number of beneficiaries n is the same in each base year. If the 3 base year assigned beneficiary samples are independent and their per capita expenditures have a common variance σ^2/n, then

$$Var(T) = Var((B_1 + B_2 + B_3)/3 + I) = Var((B_1+B_2+B_3)/3) = (1/9)[Var(B_1) + Var(B_2) + Var(B_3)] =$$
$$(1/9)(3\sigma^2/n) = \sigma^2/3n = \sigma^2/n_t,$$

where

B_i = mean assigned beneficiary expenditures in base year i;

I = national expenditure increment;

n = number of assigned beneficiaries in each base year;

$n_t = 3n$ = sum of number of beneficiaries in the 3 base years.

Target and actual expenditures are based on means, so by the Central Limit Theorem and empirical observation, they are normally distributed random variables. We assume they have a common variance σ, the variance of Medicare expenditures.

$$T \sim N(\mu_t, \sigma^2/n_t)$$

$$A \sim N(\mu_{ab}, \sigma^2/n_{ab}),$$

where

n_t = the sum of the number of assigned beneficiaries in the 3 base years

n_{ab} = the number of assigned beneficiaries in the performance year.

If T and A are independent, and under the null hypothesis of no cost savings, i.e., that the mean of assigned beneficiary and target expenditures are equal ($\mu_t = \mu_{ab}$), then

$$T - A \sim N(0, \sigma^2(1/n_t + 1/n_{ab})).$$

Further, the distribution of savings relative to the mean of target expenditures is

$$(T-A)/\mu_t \sim N(0, (\sigma/\mu_t)^2(1/n_t + 1/n_{ab})) = N(0, (CV)^2(1/n_t + 1/n_{ab})),$$

where CV is the population coefficient of variation of per capita Medicare expenditures. And

$$[(T-A)/\mu_t]/[(CV)(1/n_t + 1/n_{ab})^{0.5}] \sim N(0,1), \text{ a standard normal random variable.}$$

Let z be such that Prob ($-z \leq N(0,1) \leq z) = 1 - \alpha$,

where α is the two-sided significance level, e.g., 5%. Then

Prob $(N(0,1) \leq z) = \Phi(z) = 1 - \alpha/2$ and $z = \Phi^{-1}(1 - \alpha/2)$, where $\Phi(x)$ is the standard normal distribution function and $\Phi^{-1}(x)$ is the inverse of the standard normal distribution function.

Now a 1-α confidence interval for $(T-A)/\mu_t$ is $(-z(CV)(1/n_t + 1/n_{ab})^{0.5}, z(CV)(1/n_t + 1/n_{ab})^{0.5})$.

So the minimum savings requirement (MSR) is

$MSR = z(CV)(1/n_t + 1/n_{ab})^{0.5} = \Phi^{-1}(1 - \alpha/2)(CV)(1/n_t + 1/n_{ab})^{0.5}$,

and the corridor for no shared savings or accrued loss is (-MSR, MSR).

5.1.1 Example

Suppose we choose

1. a 10% level of significance (90% confidence interval) ($\alpha = 10\%$),
2. the CV of expenditures is 1.73 when expenditures are capped at the 99th percentile and prospective risk adjustment is used, and
3. the PGP has 25,000 assigned beneficiaries per year, which implies that the sample size associated with performance year assigned beneficiary expenditures is 25,000, and the sample size associated with the target is 3*25,000 = 75,000 (because of the 3-year baseline).

Then the $MSR = \Phi^{-1}(1 - \alpha/2)(CV)(1/n_t + 1/n_{ab})^{0.5}$
$= \Phi^{-1}(0.95)(1.73)(1/75{,}000 + 1/25{,}000)^{0.5}$
$= (1.645)(1.73)(1/75{,}000 + 1/25{,}000)^{0.5}$
$= 2.08\%$,

and the 90% confidence interval corridor for savings/accrued losses = (-2.08%, 2.08%).

5.2 Table of MSRs by PGP Patient Size

Table 5-1 shows the MSR as a function of the number of beneficiaries annually assigned to the PGP, for PGP patient sizes from 5,000 to 50,000, assuming a two-sided (bonus and losses) significance level of 10 percent, and an expenditures CV of 1.73. For example, with 5,000 assigned beneficiaries, the PGP's MSR is 4.65% of target expenditures, but with 50,000 assigned beneficiaries the PGP's MSR falls to 1.47%.

5.3 MSR When the Number of Beneficiaries in Each Base Year is Not Equal

For simplicity we assumed above that the number of assigned beneficiaries in each of the three base years is equal. In practice this will not be true. We need to derive a slightly more complex version of the MSR formula that allows different numbers of beneficiaries in each base year. This is the formula we will use in practice to calculate the MSR. Let

n_1, n_2, n_3, = the number of assigned beneficiaries in base years 1, 2, and 3.

Then

$$\text{Var}(T) = \text{Var}((B_1 + B_2 + B_3)/3 + I) = \text{Var}((B_1+B_2+B_3)/3) = (1/9)[\text{Var}(B_1) + \text{Var}(B_2) + \text{Var}(B_3)] =$$

$$(1/9)(\sigma^2/n_1 + \sigma^2/n_2 + \sigma^2/n_3) = (\sigma^2/9)(1/n_1 + 1/n_2 + 1/n_3).$$

In this case,

$$T - A \sim N(0, \sigma^2[(1/9)(1/n_1 + 1/n_2 + 1/n_3) + 1/n_{ab}]), \text{ and}$$

$$\text{Standard deviation}(T\text{-}A) = = \sigma[(1/9)(1/n_1 + 1/n_2 + 1/n_3) + 1/n_{ab}]^{0.5}.$$

The MSR is then

$$\text{MSR} = \Phi^{-1}(1 - \alpha/2)(\text{CV})[(1/9)(1/n_1 + 1/n_2 + 1/n_3) + 1/n_{ab}]^{0.5}.$$

Note that if each base year has the same number of assigned beneficiaries,

$$n_1 = n_2 = n_3 = n, \text{ the MSR is}$$

$$\text{MSR} = \Phi^{-1}(1 - \alpha/2)(\text{CV})[(1/9)(3/n) + 1/n_{ab}]^{0.5} = \Phi^{-1}(1 - \alpha/2)(\text{CV})[(1/3n) + 1/n_{ab}]^{0.5} =$$

$$\Phi^{-1}(1 - \alpha/2)(\text{CV})[1/n_t + 1/n_{ab}]^{0.5}.$$

This is the same formula derived above assuming the same number of beneficiaries in each base year.

Table 5-1
Minimum Savings Requirements as a Percentage of Target Expenditures, by Number of Assigned Beneficiaries

Number of Assigned Beneficiaries	Minimum Savings Requirement
5,000	4.65%
10,000	3.29%
15,000	2.68%
20,000	2.32%
25,000	2.08%
30,000	1.90%
35,000	1.76%
40,000	1.64%
45,000	1.55%
50,000	1.47%

Notes:

1. Assumes a coefficient of variation of expenditures of 1.73.
2. Assumes a 3-year base period and a performance year with the indicated number of assigned beneficiaries in each year.
3. Assumes a statistical significance level of 5% (one-sided, bonus only) or 10% two-sided (bonus or loss).

SECTION 6
BONUS CALCULATIONS

This section describes how the annual PGP bonus payments and final settlement will be calculated during the PGP TD, including a hypothetical "worked example." For this discussion we will focus on the three-year average baseline expenditures, PY1-PY2 targets, and the first performance year bonus calculation. For notation purposes of our examples, PY1 and PY2 indicate the two performance years of the Demonstration. BY1, BY2, and BY3 indicate the three base years, which are used to calculate the three-year baseline and performance year targets.

6.1 Calculating Three-Year Average Baseline Expenditures

The first step in calculating the target and annual bonus for a performance year is to calculate the three-year average baseline expenditures for assigned beneficiaries. Since the OACT[3] National Fee-For-Service (FFS) Expenditures are reported by aged, disabled, and ESRD populations, we calculate by aged, disabled, and ESRD entitlement status.[4] Let us suppose that the PGP's BY1-BY3 Assigned Beneficiary Per Capita Expenditures for the aged, disabled, and ESRD populations are[5]:

	BY1	BY2	BY3
Aged	$6,547	$6,813	$7,261
Disabled	$7,146	$7,496	$7,554
ESRD	$58,594	$62,748	$61,566

Now let us suppose that the National FFS Per Capita Expenditures from OACT for each base year are:

	BY1	BY2	BY3
Aged	$7,854	$8,165	$8,606
Disabled	$7,047	$7,373	$7,907
ESRD	$52,093	$51,712	$54,690

We must trend each base year to BY3. We do this by dividing the OACT National Expenditures for BY3 (for each population) by the OACT National Expenditures for each year. For example,

[3] "OACT" refers to CMS Office of the Actuary.

[4] OACT expenditures include expenditures for beneficiaries who have ESRD entitlement—those in "dialysis" or "transplant" status are in the ESRD category, but those in "functioning graft" status are in the aged or disabled categories. This categorization is also used for PGP expenditures and risk scores.

[5] We sum Part A and Part B expenditures for each entitlement status.

BY3 Aged OACT National Expenditures / BY1 Aged OACT National Expenditures = BY1 Trended Aged OACT Factor to BY3

$8,606 / $7,854 = 1.096

In our example, all OACT trend factors to BY3 are:

	BY1	BY2	BY3
Aged	1.096	1.054	1.000
Disabled	1.122	1.072	1.000
ESRD	1.050	1.058	1.000

To risk-adjust the baseline expenditures, we must obtain the mean, FFS-normalized prospective risk score for the aged, disabled, and ESRD populations.[6] Let us suppose the FFS-normalized prospective risk scores are:

	BY1	BY2	BY3
Aged	1.049	1.042	1.055
Disabled	0.975	1.028	1.048
ESRD	1.096	1.133	1.076

We risk-adjust the baseline expenditures to the BY3 assigned beneficiary level of risk. Therefore, we create risk ratios of the BY3 risk score divided by each year's risk score. For example, the aged risk ratio for BY1 is calculated as follows:

BY3 Aged Risk Score / BY1 Aged Risk Score = Aged Risk Ratio for BY1

1.055 / 1.049= 1.006

Risk ratios for the three base years in our example are:

	BY1	BY2	BY3
Aged	1.006	1.012	1.000
Disabled	1.075	1.019	1.000
ESRD	0.982	0.950	1.000

Now we must trend each base year's expenditures forward to BY3 and apply the base year weights. To do this, we multiply the per capita Assigned Beneficiary Expenditures by the OACT trend factor, by the risk ratio, and by the appropriate base year weight. BY1 has a weight

[6] The baseline risk scores are not adjusted for coding intensity.

of 10%, BY2 has a weight of 30%, and BY3 has a weight of 60%. For example, for the BY1 aged population, this is calculated as follows:

BY1 Aged PGP Per Capita Expenditures x BY1 Aged OACT Trend Factor to BY3 x BY1 Aged Risk Ratio to BY3 x 0.10 = Trended Aged BY1 Baseline Expenditures $6,547 x 1.096 x 1.006 x 0.10 = $721

All trended, risk-adjusted, weighted expenditures are:

	BY1	BY2	BY3
Aged	721	2,181	4,357
Disabled	862	2,459	4,532
ESRD	6,039	18,907	36,940

We then sum these three years for the aged, disabled, and ESRD populations to get a single baseline expenditure for each component. Sums are:

Aged	7,259
Disabled	7,853
ESRD	61,886

These three numbers will be used to calculate the performance year target. However, the overall Baseline is a weighted average of these averages, where the weights are the BY3 proportions of the population that are aged, disabled, and ESRD. Let us suppose that the BY3 aged, disabled, and ESRD proportions are 0.830, 0.164, and 0.006 respectively. The weighted average is calculated as follows:

(Aged Baseline x BY3 PGP Aged Proportion) + (Disabled Baseline x BY3 PGP Disabled Proportion) + (ESRD Baseline x BY3 PGP ESRD Proportion) = Baseline Expenditures ($7,259 x 0.830) + ($7,853 x 0.164) + ($61,886 x 0.006) = $7,684

In this numerical example, $7,684 is the baseline expenditures.

6.2 Calculating Target Expenditures

Target Expenditures for each performance year is the sum of risk-adjusted baseline expenditures and the risk-adjusted national absolute FFS expenditure growth from the baseline to the performance year. To calculate Target Expenditures, the PGP TD uses the National (FFS) Expenditure increment from OACT. The National Expenditure increment from BY3 to each performance year is the OACT National Expenditures from the performance year minus the OACT National Expenditures from BY3. For example, the BY3-PY1 aged National Expenditure increment is calculated as follows:

PY1 Aged OACT National Expenditures - BY3 Aged OACT National Expenditures = Aged National Expenditure Increment from BY3 to PY1

$9,121 - $8,606 = $516

The National Expenditure increments from the base year to PY1 and PY2 in our example are:

	BY- PY1	BY- PY2
Aged	$516	$938
Disabled	$734	$1,265
ESRD	$2,720	$4,493

We then risk-adjust both the OACT National Expenditure increment as well as the baseline to reflect performance year assigned beneficiary risk. Let us suppose that the FFS-normalized, prospective risk scores are:

	BY	PY1	PY2
Aged	1.055	1.057	1.074
Disabled	1.048	1.049	1.051
ESRD	1.076	1.069	1.070

The risk ratios are calculated by dividing the performance year risk score by the base year risk score. Risk ratios are:

	PY1	PY2
Aged	1.002	1.018
Disabled	1.001	1.003
ESRD	0.993	0.994

The Performance Year risk ratios will be capped in order to limit the influence of changes in risk scores due to variations in diagnostic coding patterns. The risk ratios will be capped within .996 to 1.004 in PY1 and .992 to 1.008 in PY2. The adjusted risk ratios then become:

	PY1	PY2
Aged	1.002	1.008
Disabled	1.001	1.003
ESRD	0.996	0.994

We risk-adjust the baseline by multiplying the baseline expenditures (for aged, disabled, and ESRD populations) by the corresponding adjusted risk ratio for each performance year. For

example, for Performance Year One, we multiply the aged baseline expenditures by the PY1 aged adjusted risk ratio:

Aged Baseline Expenditures x PY1/BY3 Aged Adjusted Risk Ratio = PY1 Aged Risk-Adjusted Base $7,259 x 1.002 = $7,273

The baseline expenditures risk-adjusted to each performance year in our example are:

	PY1	PY2
Aged	7,273	7,317
Disabled	7,860	7,875
ESRD	61,638	61,541

To risk-adjust the National Expenditure increment, we would multiply the National Expenditure increment by the performance year risk score.[7] However, the risk-adjusted national increment must also reflect the cap (upper/lower bounds) on the risk ratio. Therefore, for those risk ratios that were capped, we must reflect the cap in the risk scores used to risk adjust the national increment. To do this, we multiply the National Expenditure increment by the base year risk score and then multiply that product by the adjusted risk ratio.

The National Expenditure increment is risk-adjusted as follows:

Aged National Expenditure Increment from BY3 to PY1 x Aged Base Year Risk Score x Aged Adjusted Risk Ratio from BY3-PY1 = Risk-Adjusted Aged National Expenditure Increment from BY3 to PY1 $516 x 1.055 x 1.002 = $545

To get the Target, we add the risk-adjusted National Expenditure increment from OACT to the risk-adjusted Baseline Expenditures. For example, we would add the aged risk-adjusted National Expenditure increment from BY3-PY1 to the PY1 aged risk-adjusted base.

PY1-BY Risk-Adjusted Aged National Expenditure Increment + Aged Risk-Adjusted Base = Aged PY1 Target $545 + $7,273= $7,818

The Aged, Disabled, and ESRD Targets for each performance year in our example are:

	PY1	PY2

[7] Because the national FFS population has a risk score of one, multiplying by the performance year risk score puts the national increment at the performance year PGP risk level.

	PY1	PY2
Aged	7,818	8,315
Disabled	8,630	9,205
ESRD	64,553	66,348

The overall target for a performance year is the weighted average of the component populations. To get the target for PY1, we take a weighted average of aged, disabled, and ESRD targets, using the PY1 PGP assigned beneficiary proportions of aged, disabled, and ESRD. Let us suppose that the aged, disabled and ESRD proportions in this example are 0.830, 0.164, and 0.006 respectively.

(Aged PY1 Target x PY1 PGP Aged Proportion) + (Disabled PY1 Target x PY1 PGP Disabled Proportion) + (ESRD PY1 Target x PY1 PGP ESRD Proportion) = PY1 Target

($7,818 x 0.830) + ($8,630 x 0.164) + ($64,553 x 0.006) = $8,292

The Target for Performance Year One is $8,292 in this example. The Target for PY2 is calculated in a similar manner, using the same Baseline Expenditures. The risk ratio, risk-adjusted baseline expenditures and the risk-adjusted Expenditure Increment are updated to reflect the new performance year. That is, these quantities are different for each Performance Year.

6.3 Annual Bonus Calculations—Computation in Performance Year One

The Per Capita Target was calculated as described in the previous section. Per Capita Assigned Beneficiary Expenditures are Assigned Beneficiary Expenditures for PY1. We then calculate Total Target and Total Assigned Beneficiary Expenditures by multiplying each by assigned beneficiary Person-Years in PY1. Assume Person-Years in PY1 is equal to 19,233.

Per Capita Target Expenditures x Person-Years = Total Target Expenditures

$8,292 x 19,233 = $159,476,396

Per Capita Assigned Beneficiary Expenditures x Person-Years = Total Assigned Beneficiary Expenditures

$7,670 x 19,233= $147,517,110

Total Target Minus Assigned Beneficiary Expenditures is calculated in order to determine if the PGP's Assigned Beneficiary Expenditures are above or below the Target.

Total Target Expenditures – Total Assigned Beneficiary Expenditures = Total Target Minus Assigned Beneficiary Expenditures

$159,476,396- $147,517,110= $11,959,286

Next, we test whether or not the savings generated by the PGP are greater than **X%** of its Target Expenditures, where **X%** is the Minimum Savings Requirement. The Minimum Savings Requirement is the minimum threshold necessary to share savings, or when negative, to accrue a loss. It is calculated using a 95% one-sided confidence interval and a 90% two-sided confidence interval. It varies depending on the number of beneficiaries assigned in the 3-year base period and in the performance year. Let us suppose that the Minimum Savings Requirement in this example is 2.36%. The Total Target Expenditures multiplied by 2.36% is the Minimum Savings Requirement ($), which is equal to $3,762,169.

The Accrued Loss from Prior Year is simply the Accrued Loss Carried Forward from the prior year.

The Shared Savings Before Accrued Loss Adjustment is equal to 50% of Total Target Minus Assigned Beneficiary Expenditures if Total Target Minus Assigned Beneficiary Expenditures is greater than or equal to the Minimum Savings Requirement. If Total Target Minus Assigned Beneficiary Expenditures is not greater than or equal to the Minimum Savings Requirement, Shared Savings Before Accrued Loss Adjustment is set at zero. In this example, Target Minus Assigned Beneficiary Expenditures ($11,959,286) is greater than the Minimum Savings Requirement ($3,762,169). Therefore, Shared Savings Before Accrued Loss Adjustment is calculated as follows:

Total Target Minus Assigned Beneficiary Expenditures x 50% = Shared Savings Before Accrued Loss Adjustment $11,959,286 x 0.50 = $5,979,643

Shared Savings is equal to "Shared Savings Before Accrued Loss Adjustment plus Accrued Loss from Prior Year" if "Shared Savings Before Accrued Loss Adjustment plus Accrued Loss from Prior Year" is greater than zero. If it is not, then Shared Savings is equal to zero. In this example, Shared Savings is $5,979,643 because there is no Accrued Loss from Prior Year.

Under the terms of the Demonstration, a PGP's annual shared savings cannot exceed 5% of its Target Expenditures for that year. Any amount above this Shared Savings Cap is retained by Medicare. In this example, the Shared Savings Cap amount is calculated as follows:

Total Target Expenditures x 5% = Shared Savings Cap $159,476,396 x 0.05 = $7,973,820

The Performance Payment is based on the Lesser of Shared Savings or Shared Savings Cap. In this case, the Shared Savings ($5,979,643) is less than the Shared Savings Cap ($7,973,820).

The Performance Payment is based both on efficiency and quality. The Performance Payment for Efficiency is 20% of the Lesser of Shared Savings or Shared Savings Cap in PY1 and 10% of the Lesser of Shared Savings or Shared Savings Cap in PY2. The Performance

Payment for Quality is 80% of the Lesser of Shared Savings or Shared Savings Cap in PY1 and 90% of the Lesser of Shared Savings or Shared Savings Cap in PY2. Therefore, in this example, the Performance Payment for Efficiency in PY1 is:

Lesser of Shared Savings or Shared Savings Cap x 20% = Performance Payment for Efficiency $5,979,643 x 0.20 = $1,195,929

The Maximum Performance Payment for Quality in PY1 is:

Lesser of Shared Savings or Shared Savings Cap x 80% = Maximum Performance Payment for Quality $5,979,643 x 0.80 = $4,783,714

The Performance Payment for Quality is based on the Quality Score that the PGP achieves in the performance year. Please see the Physician Group Practice Transition Demonstration Quality Measurement and Reporting Specifications for more detail on calculating the quality score. Assuming that the PGP achieves 82% in this example:

Maximum Performance Payment for Quality x Quality Score = Performance Payment for Quality $4,783,714 x 0.82 = $3,922,646

The PGP sites that are eligible to share in savings for the given performance year will have the opportunity to earn an additional 10% in shared savings for performance on a patient experience of care measure and composite quality measure scores, including that CMS can publicly report these results. This will increase the sharing rate to up to 60% for groups that are eligible to share savings. The additional 10% of shared savings payments will be outside the maximum shared savings that is currently set at 5% of total target expenditures. These two additional performance measures will each account for 5% of the additional 10% in shared savings.

Let us suppose that the PGP scores 100% on each of these two measures. The PGP is eligible to share in savings for PY1, so the Leading Quality Performance Payment is:

(Leading Quality Score on Patient Experience of Care Measure x 0.05 x Target Minus Assigned Beneficiary Expenditures) + (Leading Quality Score on Composite Quality Measures x 0.05 x Target Minus Assigned Beneficiary Expenditures) = Leading Quality Performance Payment (100% x 0.05 x $11,959,286) + (100% x 0.05 x $11,959,286) = $1,195,929

If the PGP was not eligible to share in savings (i.e. Target Minus Assigned Beneficiary Expenditures were below the Minimum Savings Requirement), then the Leading Quality Performance Payment would be zero.

The Total Earned Performance Payment is the sum of the Performance Payment for Efficiency and the Performance Payment for Quality and the Leading Quality Performance Payment. In this example, it is calculated as follows:

Performance Payment for Efficiency + Performance Payment for Quality + Leading Quality Performance Payment = Total Earned Performance Payment $1,195,929+ $3,922,646+ 1,195,929= $6,314,503

A portion of the Total Earned Performance Payment is withheld from the PGP until the end of the Demonstration, to protect Medicare against any future losses incurred by the PGP. The withheld amount is 25% of the Total Earned Performance Payment. In this example, the Payment Withheld Until Final Settlement is equal to:

Total Earned Performance Payment x 25% = Payment Withheld Until Final Settlement $6,314,503 x 0.25 = $1,578,626

The bonus paid to the PGP at the annual settlement for each performance year is equal to 75% of the Total Earned Performance Payment. In this example, it is calculated as follows:

Total Earned Performance Payment x 75% = Bonus Paid at Annual Settlement $6,314,503 x 0.75 = $4,735,877

The Accrued Withhold from Prior Year is the Accrued Withhold Carried Forward from the prior year. In this example, it is zero. The Accrued Withhold Carried Forward is the sum of Payment Withheld until Final Settlement and the Accrued Withhold from Prior Year.

Payment Withheld until Final Settlement + Accrued Withhold from Prior Year = Accrued Withhold Carried Forward $1,578,626+ 0 = $1,578,626

The Accrued Loss is equal to 50% of Target Minus Assigned Beneficiary Expenditures if Target Minus Assigned Beneficiary Expenditures is less than or equal to the negative of the Minimum Savings Requirement. If Target Minus Assigned Beneficiary Expenditures is greater than the negative of the Minimum Savings Requirement, then Accrued Loss is zero. In this example, Target Minus Assigned Beneficiary Expenditures ($11,959,286) is greater than the negative of the Minimum Savings Requirement (-$3,762,169), so Accrued Loss is zero.

Finally, if:

(i) Accrued Loss from Prior Year plus Shared Savings Before Accrued Loss Adjustment is less than zero, then the Accrued Loss Carried Forward is equal to the Accrued Loss

from Prior Year plus Shared Savings Before Accrued Loss Adjustment[8] plus Accrued Loss.

(ii) Accrued Loss from Prior Year plus Shared Savings Before Accrued Loss Adjustment is greater than or equal to zero, then Accrued Loss Carried Forward is equal to zero plus Accrued Loss (which would be equal to zero).

In this example, Accrued Loss Carried Forward is equal to zero.

[8] It is necessary to include this quantity because there can be a positive offset to the accrued loss from the prior year.

REFERENCES

Kautter, J., Pope, G.C., et al.: Physician Group Practice Demonstration Bonus Methodology Specifications. Report, CMS Contract No. 500-00-0024, T.O. No. 13. December 20, 2004.

Pope, G.C., Trisolini, M., Kautter, J., et al.: Physician Group Practice (PGP) Demonstration. Design Report, CMS Contract No. 500-95-0048, T.O. No. 4. October 2, 2002.