

# ONCOLOGY CARE MODEL

## OCM PERFORMANCE-BASED PAYMENT METHODOLOGY

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*Version 3.2*

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## Revision History

Version	Date	Description of Changes
1.0	4/15/16	Initial version.
1.1	6/27/16	<ol style="list-style-type: none"> <li>1. Revised Section 3.1.1, Prediction Model.</li> <li>2. Revised Section 7.2, Performance Rates, to clarify minimum denominator size is over two performance periods.</li> <li>3. Revised Section 7.3.3, Patient Experience of Care Scoring.</li> <li>4. Added language to Section 7.4, Inapplicable Measures and Measures with Insufficient Denominator Size.</li> <li>5. Removed Appendix A: OCM Included Cancer Diagnoses and Cancer Types and all references. This information is now located on the CMS OCM website. ICD9 diagnosis code 277.89 was removed from this list. As a result, the remaining appendices have been re-lettered.</li> <li>6. Added a new appendix, Appendix F: Patient Experience of Care Measure Composites and Scoring.</li> <li>7. Added a new section (Section 9) for OCM resource information.</li> <li>8. Added links to the OCM Portal throughout where applicable.</li> </ol>
2.0	12/27/16	<ol style="list-style-type: none"> <li>1. Revised Introduction to reflect earlier availability of choice to elect two- sided risk.</li> <li>2. Revised Section 7 (Quality Measures and Performance) to reflect modified reporting requirements for the first performance period.</li> <li>3. Added a new appendix, Appendix D, for the baseline trend factors. As a result, remaining appendices were re-lettered.</li> <li>4. Added a new appendix, Appendix E, for the baseline WinsORIZATION thresholds. As a result, remaining appendices were re-lettered.</li> <li>5. Updated measure names in Table 2 to be consistent with the OCM Measures Guide.</li> <li>6. Updated language in Section 7.3.2 (Practice-Reported Measure Scoring) to modify references to PQRS data.</li> <li>7. Revised Section 7.3.3 (Patient Experience of Care Scoring) to provide clarification around the scoring approach.</li> <li>8. Updated links and references to external documents throughout as necessary.</li> </ol>

Version	Date	Description of Changes
2.1	12/27/17	<ol style="list-style-type: none"> <li>1. Revised text and formulas in Section 3.1.2 (Experience Adjuster) and Appendix G (Mathematical Description of the Methodology for Establishing Target Amounts) to reflect a consistent definition of the experience adjuster.</li> <li>2. Updated language in Sections 3.2.1 (Trend Factor) and 3.2.2 (Adjustment for Novel Therapies) to specify the population used to determine trend and novel therapies adjustments.</li> <li>3. Updated language in Section 6.2.1 (Geographic Variation Adjustment) to clarify the approach used to determine the geographic adjustment to the PBP.</li> <li>4. Revised the quality scoring approach in Section 7 to reflect:               <ol style="list-style-type: none"> <li>(1) changes to when measures are counted as P4R and P4P,</li> <li>(2) the reporting of OCM-4, OCM-5, and OCM-12 on an aggregate rather than individual basis,</li> <li>(3) the retirement of OCM-7, and</li> <li>(4) information on the data that will be used to score the practice-reported measures for each performance period.</li> </ol> </li> <li>5. Revised text in Section 7.3.1 (Claims-Based Measure Scoring) to reflect that performance thresholds have already been calculated and shared with OCM participants.</li> <li>6. Updated language in Section 7.3.3 to reflect (1) that performance thresholds have been calculated for the patient-experience measure and (2) information on the surveys that will be used to score OCM-6 for each performance period.</li> <li>7. Added a new appendix, Appendix I, for the description of the OCM prediction model.</li> <li>8. Updated links and references to external documents throughout as necessary.</li> </ol>
3.0	4/30/18	<ol style="list-style-type: none"> <li>1. Clarified the tie-breaker logic used in assigning cancer type in Section 1.1.3 and Appendix B to be consistent with how it is applied.</li> <li>2. Revised the logic for including MEOS payments in the episode expenditures in Section 5.</li> <li>3. Revised the quality scoring approach in Section 7 to reflect changes to when measures are counted as P4R and P4P.</li> <li>4. Revised the approach to episode definition in Appendix A to incorporate the use of chemotherapy and immunotherapy administration diagnosis codes Z51.11 and Z51.12.</li> </ol>
3.1	6/25/18	<ol style="list-style-type: none"> <li>1. Modified the pay-for-reporting scoring related to the OCM FFS Beneficiary measures in Section 7.</li> <li>2. Added specifications for claims-based risk adjustment factors to Appendix I.</li> </ol>

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## OCM Performance-Based Payment Methodology

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Version	Date	Description of Changes
3.2	12/17/18	<ol style="list-style-type: none"><li>1. Incorporated throughout the addition of the alternative two-sided risk arrangement.</li><li>2. Modified Section 7 to include quality scoring methodology for only the first two performance periods. This includes replacing the text associated with OCM-6 with references to the OCM PBP Methodology effective July 2, 2017.</li><li>3. Replaced the text in Appendix H (Patient Experience of Care) with a reference to the OCM PBP Methodology effective July 2, 2017.</li><li>4. Added a new appendix, Appendix J, for the description of the ACO Overlap calculation.</li></ol>

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## Introduction

This paper describes the technical details for the methodology that the Centers for Medicare & Medicaid Services (CMS) will use to determine a practice's or pool's performance-based payment in the Oncology Care Model (OCM).

OCM is a payment model designed to test the effects of better care coordination, improved access to practitioners, and appropriate clinical care on health outcomes and costs of care for Medicare fee-for-service (FFS) beneficiaries with cancer who receive chemotherapy. OCM encourages participating practices to improve care and lower costs through episode-based payments that financially incentivize high-quality coordinated care. CMS expects that these changes made by the practices in response to OCM participation will result in better care, smarter spending, and healthier people.

OCM is a multi-payer model that includes Medicare FFS and other payers to leverage the opportunity to transform care for oncology patients across the population. There may be differences in certain model design aspects between the subset of OCM for Medicare FFS beneficiaries and the subset for other payer beneficiaries, such as specific payment incentives. However, the approach to practice transformation is consistent across OCM. This document reflects only the methodologies that will be used for Medicare FFS beneficiaries.

OCM targets physician group practices that prescribe chemotherapy for cancer and is centered on 6-month episodes of care triggered by receipt of chemotherapy. OCM incorporates a two-part payment system for participating practices, composed of a Monthly Enhanced Oncology Services (MEOS) payment and the potential for a retrospective performance-based payment. The MEOS payment will assist participating practices with effectively managing and coordinating care for oncology patients during episodes of care, whereas the potential for performance-based payment will incentivize practices to lower the total cost of care relative to a risk-adjusted target amount and to improve the quality of care for beneficiaries. Practices will be eligible to be paid the MEOS payment monthly for each beneficiary during an episode attributed to them regardless of cancer type, unless the beneficiary enters hospice or dies. Performance-based payments will be made only for higher-volume cancer types for which it is possible to calculate accurate benchmarks. These cancer types, and the lower-volume cancer types for which we will not calculate benchmarks, are listed in the document "[OCM Cancer Type Mapping and Codes](#)" that applies for each performance period.

Episodes will initiate upon the date of service for an initial Part B chemotherapy drug claim with a corresponding cancer diagnosis on the claim, or upon the fill date for an initial Part D chemotherapy drug claim with a corresponding Part B claim for cancer on the date of, or in the 59 days preceding, the drug claim. Episodes will continue for 6 months. Beneficiaries who continue to receive chemotherapy after completing the 6-month episode will initiate a new episode. Episodes will be organized by performance periods, which are the 6-month periods of time during which a cohort of episodes terminates and is reconciled together. OCM episode expenditures will consist of all Medicare Part A and Part B expenditures and certain Part D expenditures for a beneficiary's care throughout the 6 months. These expenditures will be compared to a risk-adjusted, practice-



specific target amount, which will be based on historical expenditures trended forward to the performance period and subject to a discount (representing Medicare savings).

OCM features three possible risk arrangements: a one-sided risk arrangement with a 4 percent discount, a two-sided risk arrangement with a 2.75 percent discount (original two-sided risk), and a two-sided risk arrangement with a 2.5 percent discount (alternative two-sided risk); in either two-sided risk arrangement, the practice or pool will be eligible for higher performance-based payments. The one-sided risk arrangement will apply to all practices and all episodes initiating July 1, 2016 – January 1, 2017 (the first performance period). The original two-sided risk arrangement will be available in all following OCM performance periods for practices that have signed and uploaded the Participation Agreement Risk Arrangement Amendment. The alternative two-sided risk arrangement will be available in Performance Period 6 at the earliest for practices that have signed and uploaded the amended and restated Participation Agreement.

Practices are allowed to request a change in risk arrangement semiannually. Practices or pools that do not achieve a performance-based payment by the time of the initial reconciliation of the fourth performance period must exit the model or opt for a two-sided risk arrangement thereafter until achieving a performance-based payment. Eligibility for performance-based payments is contingent upon meeting certain quality thresholds and other requirements as articulated in the OCM Participation Agreement.

The model will run for 5 years, beginning July 1, 2016, and ending June 30, 2021, with a model closeout period after model completion. Calculation of performance-based payment will occur semi-annually and will include all episodes ending in a given 6-month period. [Table 1](#) provides the dates associated with each of the nine, 6-month performance periods, as well as the risk arrangements associated with each.

Table 1: OCM Performance Periods

Model Year	Performance Period	Episodes Beginning	Episodes Ending	Risk Arrangement
1	1	7/1/2016 - 1/1/2017	12/31/2016 - 6/30/2017	One-sided risk only
2	2	1/2/2017 - 7/1/2017	7/1/2017 - 12/31/2017	One- or Two-sided risk (original)
2	3	7/2/2017 - 1/1/2018	1/1/2018 - 6/30/2018	
3	4	1/2/2018 - 7/1/2018	7/1/2018 - 12/31/2018	
3	5	7/2/2018 - 1/1/2019	1/1/2019 - 6/30/2019	
4	6	1/2/2019 - 7/1/2019	7/1/2019 - 12/31/2019	One- or Two-sided risk (original or alternative)
4	7	7/2/2019 - 1/1/2020	1/1/2020 - 6/30/2020	
5	8	1/2/2020 - 7/1/2020	7/1/2020 - 12/31/2020	
5	9	7/2/2020 - 1/1/2021	1/1/2021 - 6/30/2021	

The following sections provide more detail on how we will calculate the performance-based payments. We calculate the target amounts using a period of baseline data with which we define a set of episodes and calculate the expenditures associated with those episodes. The method used to define those episodes is described in [Section 1](#). The method used to calculate the expenditures associated with the historical episodes is described in [Section 2](#). In [Section 3](#) we describe the method used to determine the target amount for each practice, including the benchmarking model that will be used to estimate risk-adjusted target episode prices. In [Section 4](#) we describe how we will identify episodes in each performance period, and in [Section 5](#) we describe the method used to calculate the expenditures associated with the performance period episodes. In [Section 6](#) we describe the reconciliation of performance period expenditures and the target amounts and the calculation of the performance-based payment, and in [Section 7](#) we describe how we will determine the quality score used in the calculation of the performance multiplier. Finally, in [Section 8](#) we present an example of a performance-based payment calculation.

## Section 1: Determination of Baseline Episodes

The first step in determining performance-based payment is to define the set of historical episodes that will be used to develop the baseline episode expenditures on which the target amounts will ultimately be based. The historical period used to determine this set of episodes is January 2012– June 2015. All episodes included in the baseline begin between January 2012 and December 2014 and end between July 2012 and June 2015. Definition of the historical episodes consists of two major steps:

1. Identification of episodes.
2. Attribution of episodes to practices.

### 1.1 Episode Identification

We identify episodes by first identifying potential “trigger events” in the claims data that indicate the provision of chemotherapy, as described below in [Section 1.1.1](#). We then determine if the beneficiary meets the eligibility criteria described in [Section 1.1.2](#) for the 6 months following each trigger event. Episodes initiate on the date of the first trigger event for which the beneficiary meets all eligibility criteria in the 6 months following. Subsequent episodes may be defined in the historical period once earlier episodes have completed. Once episodes have been defined, we assign a cancer type to the episode, described in [Section 1.1.3](#).

#### 1.1.1 Identification of Trigger Events

Each 6-month episode will begin on the date associated with a trigger event, identified as the first observed Part B chemotherapy drug claim in the historical period with a corresponding cancer diagnosis on the claim OR the first Medicare Part D chemotherapy drug claim with a corresponding Part B claim for cancer. Many chemotherapy drugs are identifiable from Healthcare Common Procedure Coding System (HCPCS) codes, which are the basis of payment for services billed under Medicare Part B. Chemotherapy drugs not covered under Part B are covered under Medicare Part D and are identifiable by National Drug Codes (NDCs). All codes associated with these drugs are referred to as “initiating cancer therapies,” and can be found in the list of “[OCM Initiating Cancer Therapies and Codes](#)” for each performance period. This list of codes will be updated periodically as new chemotherapy drugs become available.

We will identify trigger events by examining chemotherapy drug claims in the Part B (Outpatient, Carrier, and Durable Medical Equipment, Prosthetics/Orthotics, and Supplies [DMEPOS]) and Part D claims files. A Part B claim qualifies as a trigger event if it contains both an initiating cancer therapy and a cancer diagnosis included in the model, listed in the document “[OCM Cancer Type Mapping and Codes](#)” for each performance period. The Part B claim must not have a place of service code indicating an inpatient hospital setting because chemotherapy administered in a hospital does not qualify as a trigger event for OCM. When the trigger event is a Part B drug claim, the episode beginning date is the date of service on the Part B chemotherapy drug claim.

A Part D claim qualifies as a trigger event if it contains an initiating cancer therapy *and* if a Part B claim with an included cancer diagnosis in the document “[OCM Cancer Type Mapping and Codes](#)” can be found on the prescription fill date or in the 59 days preceding the fill date (because Part D

claims do not contain diagnosis codes). When the trigger event is a Part D claim, the episode beginning date is the fill date on the Part D chemotherapy drug claim.

There is no requirement that a chemotherapy-free period exist before the beginning of any episode. The existence of chemotherapy claims in the pre-episode period will be accounted for in the benchmarking process.

Once an episode has begun, it will last for 6 calendar months, except in the case of death before 6 months have passed. Such episodes are the only ones that may end before 6 months. If a beneficiary dies mid-episode, the practice will no longer be eligible to be paid the MEOS payment, but the episode will still be included in the benchmarking and performance-based payment aspects of the model. Likewise, if a beneficiary elects hospice mid-episode, the practice will no longer be eligible to be paid the MEOS payment, but the episode will still be included in the benchmarking and performance-based payment aspects of the model. Medicare expenditures incurred after hospice election will be included in benchmarking and reconciliation.

Subsequent episodes of chemotherapy may begin after earlier episodes have been completed; chemotherapy claims during an episode do not trigger new episodes. Subsequent episodes have the same requirements for trigger events as prior episodes; any amount of time may pass between the end of one episode and the beginning of the next.

### 1.1.2 Episode Eligibility

A beneficiary must meet the following requirements for all 6 months of the episode, or in the event the beneficiary dies prior to 6 months, until the beneficiary's death, for that episode to be eligible for inclusion in OCM:

- Beneficiary is enrolled in Medicare Parts A and B;
- Beneficiary does not receive the Medicare End Stage Renal Disease (ESRD) benefit<sup>1</sup>;
- Beneficiary has Medicare as his or her primary payer;
- Beneficiary is not covered under Medicare Advantage or any other group health program;
- Beneficiary received chemotherapy treatment for cancer (defined above in [Section 1.1.1](#));
- Beneficiary has at least one Evaluation & Management (E&M) visit, defined as HCPCS codes in the ranges 99201-99205 and 99211-99215, with a cancer diagnosis included in the document "[OCM Cancer Type Mapping and Codes](#)" during the 6 months of the episode.

Episodes in which a beneficiary dies or elects hospice care before the end of 6 months are considered eligible; death will be the only case in which an episode will be shorter than 6 months.

The detailed specifications for identifying eligible episodes are located in [Appendix A](#).

### 1.1.3 Assignment of Cancer Type

Each episode will be classified by cancer type (e.g., prostate, lymphoma, breast). The cancer type will be used in categorizing episodes for reporting, monitoring, and risk adjustment purposes.

Cancer type will be assigned using the plurality of diagnoses on E&M visits in the carrier file that occurred during the episode. The diagnosis code corresponding to (on the same line as) each

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<sup>1</sup> ESRD status will be determined using information in the Medicare Enrollment Database.

E&M visit will be mapped to a cancer type. The mapping of diagnosis code to cancer type is included in the document “[OCM Cancer Type Mapping and Codes](#)” for each performance period. This document identifies the cancer types that are reconciliation-eligible (as defined in the OCM Participation Agreement), as well as those that are not reconciliation-eligible but are still eligible for the MEOS payment. The cancer type with the most E&M visits is the one that will be assigned to the episode. In the event of a tie, we will apply tie-breakers in the following order, assigning the cancer type associated with:

1. The most recent E&M visit during the episode, then the second-most recent E&M visit, etc.;
2. The cancer type that is reconciliation-eligible;
3. The lowest last digit of the Taxpayer Identification Number (TIN) associated with the visit;
4. The highest claim ID.

The detailed specifications for assigning cancer type are included in [Appendix B](#).

## **1.2 Episode Attribution**

Each 6-month episode will be attributed to the TIN (in the case of non-OCM practices) or OCM ID (in the case of OCM practices) associated with the most E&M visits with a cancer diagnosis during the 6-month episode; this is known as the plurality approach. E&M visits will be defined by the HCPCS code ranges 99201 – 99205 and 99211 – 99215. For an E&M visit to qualify and be counted toward plurality, it must be associated with (on the same line item as) one of the cancer diagnosis codes included in the document “[OCM Cancer Type Mapping and Codes](#).” We will use the Part B Carrier file to identify E&M visits.

During the baseline period, an OCM practice is generally defined by one OCM ID and one TIN. In cases where a participating OCM practice billed under multiple TINs or changed its TIN partway through the baseline time period used to determine attribution, we will associate some or all old and new TINs with the practice during that baseline time period for the purposes of attributing episodes. This will ensure that all E&M visits are found and used to determine the baseline attribution.

In a performance period, an OCM practice is defined by one OCM ID and one TIN. If the TIN on a qualifying claim is associated with a participating OCM practice, the visit will be credited to that practice. Otherwise, the visit will be credited to the TIN on the claim, which would be that of a practice not participating in OCM. We will add up all qualifying E&M visits occurring during the episode by practice and attribute the episode to the practice with the most qualifying E&M visits, which may be a participating OCM practice or not. In the case of a tie (i.e., two different practices having the same number of qualifying E&M visits), we will attribute the episode to the practice with the most recent E&M visit(s) in the episode. If a tie still exists we will attribute the episode to the TIN or OCM ID with the lowest last digit of the TIN, lowest second-to-last digit, etc.

### **1.2.1 Attribution for Pooled Participants**

As described above, each episode will be attributed to an individual practice, where a participating OCM practice is represented by one OCM ID. Some practices may choose or be required to participate in the model on a partnership basis by pooling with other practices. In such cases, we

will still attribute the episodes to the individual practices within the pool. We will not combine visits to all TINs in a pool when determining plurality. Episodes attributed to the individual practices in a pool will be combined (summed) for the purposes of reconciliation and quality measurement, though information on the episodes attributed to each individual practice in the pool will be available.

The detailed specifications for episode attribution are located in [Appendix C](#).

## Section 2: Calculation of Baseline Episode Expenditures

Once baseline episodes have been identified and attributed to practices, we then add up the Medicare FFS expenditures incurred during each episode. Baseline episode expenditures will include expenditures for all claims where the service date is during the episode. The service date for most claims is the date the beneficiary received the service (referred to as the “from date” on the claim). For Inpatient and Skilled Nursing Facility (SNF) claims, the service date is the date the beneficiary was admitted to the facility (the admission date on the claim). For Part D claims the service date is the date the prescription was filled.

### 2.1 Components of Baseline Expenditures

Baseline episode expenditures include all Medicare Part A and Part B FFS expenditures (payments) and certain Part D expenditures (see [Figure 1](#) below). The Part A and Part B expenditures come from the Inpatient, SNF, Outpatient, Carrier, DMEPOS, Home Health Agency (HHA), and Hospice claims files. Medicare expenditures will be adjusted to exclude indirect medical education (IME) and disproportionate share hospital (DSH) payments, as well as inpatient pass through amounts, which include direct graduate medical education (GME), capital-related costs, and bad debt. Additional information on these adjustments is provided below. The Part D expenditures come from the Part D claims files and include only the Low-Income Cost Sharing Subsidy (LICS) amount and 80 percent of the Gross Drug Cost above the Catastrophic (GDCA) threshold. Other Part D expenditures will not be included because they are paid on a capitated basis.

The Part A and Part B expenditures will be sourced from CMS’ standardized payment files.<sup>2</sup> These files remove geographic pricing differences and payments made from special Medicare programs that are not directly related to services provided (IME, GME, DSH) and do not include the effects of upward or downward payment adjustments related to other CMS programs, such as the Hospital Acquired Condition Reduction Program, the Electronic Health Record Incentive Program, and the Hospital Value-based Purchasing Program. These files have a “final maturity” of 12 months of claims run-out. That is, after 12 months has passed, they are no longer updated to account for additional claims or adjustments that have been submitted. Because OCM final reconciliations will include 14 months of claims run-out (see [Section 6.2](#)) there is a small possibility that some claims included in the final reconciliation (i.e., those submitted in months 13 and 14) will not have a corresponding standardized payment. In these cases, we will use the “unstandardized” payment from the claim.

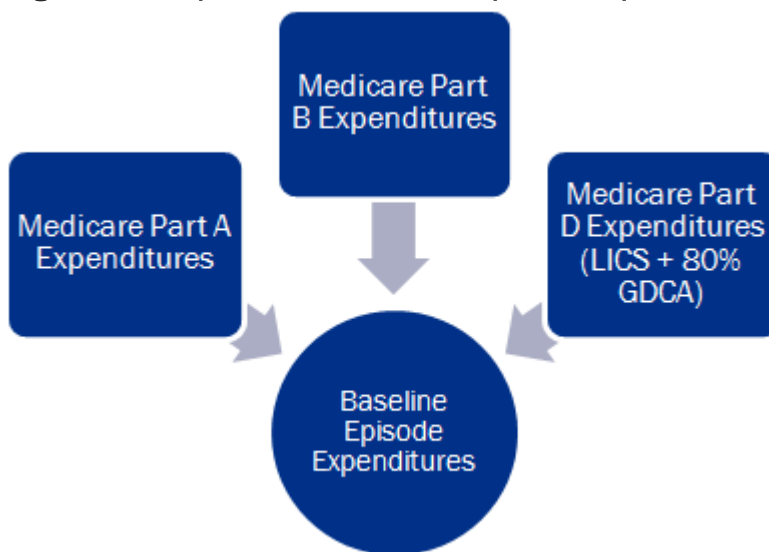
[Figure 1](#) shows the components of the baseline episode expenditures.

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<sup>2</sup>  
[https://www.qualitynet.org/dcs/BlobServer?blobkey=id&blobwhere=1228890829171&blobheader=multipart%2Foctet-stream&blobheadername1=Content-Disposition&blobheadervalue1=attachment%3Bfilename%3D229%2F737%2FDtd Price\\_Stndztn\\_Mthdly\\_0718.pdf&blobcol=urldata&blobtable=MungoBlobs](https://www.qualitynet.org/dcs/BlobServer?blobkey=id&blobwhere=1228890829171&blobheader=multipart%2Foctet-stream&blobheadername1=Content-Disposition&blobheadervalue1=attachment%3Bfilename%3D229%2F737%2FDtd Price_Stndztn_Mthdly_0718.pdf&blobcol=urldata&blobtable=MungoBlobs)



Figure 1: Components of Baseline Episode Expenditures



Before finalizing the baseline episode expenditures, we will apply four adjustments. The first is an adjustment to account for overlap of OCM episodes and other CMS models ([Section 2.2](#)); the second is an adjustment to remove the effects of sequestration ([Section 2.3](#)); the third is a trend adjustment ([Section 2.4](#)); and the fourth is an outlier adjustment called Winsorization ([Section 2.5](#)).

## 2.2 Accounting for Model Overlap in the Baseline

In the event that an OCM beneficiary was aligned with other CMS models during the baseline period, we will adjust the baseline expenditures accordingly, as described below.

### *Medicare Accountable Care Organizations (ACOs)*

In all of the OCM actual episode expenditure calculations, we will account for any reductions in FFS payments for OCM beneficiaries aligned to Pioneer ACOs that elected population-based payments by adjusting the standardized paid amount on claims, as necessary, to reflect the amount that would have been paid in the absence of population based-payments. We will not include the Pioneer ACO’s monthly payment for OCM beneficiaries aligned to Pioneer ACOs that elected population-based payments as OCM baseline expenditures.

### *Bundled Payments for Care Improvement Initiative (BPCI)*

When a BPCI episode overlaps with an OCM episode in the baseline period, any expenditure reductions or increases will first accrue to the BPCI episode. We will prorate the BPCI reconciliation amount by the portion of the BPCI episode that overlapped with the OCM episode. This prorated BPCI reconciliation amount will be included in the baseline episode expenditures of that OCM beneficiary’s care during the OCM episode.

## 2.3 Sequestration Adjustment

Beginning April 1, 2013, all Medicare expenditures were reduced by 2 percent due to sequestration. In the absence of sequestration, Medicare expenditures would be approximately 2 percent higher (technically 1/0.98 or 2.041 percent higher) than they actually were. OCM baseline claims occurring on and after April 1, 2013, were covered by sequestration and reflect the 2 percent sequestration decrease, and those occurring prior to April 1, 2013, do not. To ensure that the baseline expenditures do not contain some claims with the sequestration reduction and some



without, we will adjust the expenditures at the claim level, based on the date of service, to yield an amount equal to what the expenditures would have been in the absence of sequestration. The same adjustment will be made to performance period expenditures. Because any performance-based payments made under OCM will be subject to sequestration when payment is made, expenditure reductions will be calculated based on expenditures that do not reflect sequestration, so as not to double-count the sequestration reduction.

All non-DMEPOS claims with a through date of April 1, 2013, or after will be adjusted by dividing the Medicare payment by 0.98 (this reflects how sequestration was actually implemented). DMEPOS claims from April 1, 2013, or after will be adjusted by dividing the Medicare payment by 0.98. Dividing by 0.98 will increase the claim payments up to the amount that would have been paid in the absence of sequestration.

### **2.4 Baseline Trend**

The trend adjustment will move all episode expenditures in the baseline period to the same level as the expenditures for episodes ending in the most recent 6-month historical period (January – June, 2015). We will adjust expenditures for episodes ending in the first historical period (July – December, 2012) by multiplying them by the ratio of average episode expenditures in the most recent historical period to average episode expenditures in the first historical period. A similar process will be followed for episodes ending in the second through fifth historical periods. This will bring all baseline episode expenditures forward to sixth historical period. The baseline trend factors are located in [Appendix D](#).

### **2.5 Winsorization**

After applying the adjustments for model overlap, sequestration, and baseline trend, we apply the fourth adjustment to the baseline expenditures, which is called Winsorization. Winsorization is a two-sided truncation adjustment that will limit the impact of outliers on the average expenditures. We will Winsorize episode expenditures at the 5th and 95th percentiles of per-episode expenditures by cancer type. Specifically, episode expenditures below the 5th percentile by cancer type will be set to the 5th percentile, and episode expenditures above the 95th percentile will be set to the 95th percentile within cancer type. Winsorization thresholds will be set using all episodes defined and attributed nationally, for both OCM and non-OCM practices. The Winsorization thresholds applied in the calculation of baseline expenditures are located in [Appendix E](#).

## Section 3: Calculation of Target Amounts

The target amount is a projection of what the Medicare expenditures would have been during the performance period for episodes attributed to the OCM practice or pool in the absence of OCM participation, reduced for the OCM discount; it is risk-adjusted and specific to each OCM practice. Only episodes that are assigned reconciliation-eligible cancer types, as defined by the OCM Participation Agreement, will be included in each practice's target amount. The target amount is based on baseline expenditures (see [Section 2](#)) that have been trended forward to the performance period and adjusted for the Medicare OCM discount (representing Medicare savings).

We first calculate a risk-adjusted *baseline price* for each episode. The baseline prices will be trended forward to the performance period and adjusted to reflect the costs of chemotherapy drugs that have received recent U.S. Food and Drug Administration (FDA) approval, as described in [Section 3.2](#) below. The trended and adjusted baseline price is referred to as the *benchmark price*. The benchmark price will then be reduced by a CMS discount (4 percent in the one-sided risk arrangement and 2.75 percent in the original two-sided risk arrangement). The discounted benchmark price is the *target price*. The sum of the target prices for all episodes attributed to a practice in a given performance period is equal to the *target amount* that will be compared with that practice's actual episode expenditures (defined in [Section 5](#)).

Calculating the target amount for each practice involves the following steps:

1. Determining the baseline price for each episode (Section 3.1).
2. Determining the benchmark price for each episode (Section 3.2).
3. Determining the target price for each episode (Section 3.3)
4. Determining the benchmark and target amounts for each practice (Section 3.4).

In the event that a practice is participating in a pool, benchmark and target amounts will be based on episodes attributed to all practices within the pool.

### 3.1 Baseline Price (per Episode)

The baseline price for each episode will be calculated by first predicting the baseline expenditures associated with the specific characteristics of that episode, described below in [Section 3.1.1](#), and then adjusting the prediction to account for the practice's own experience in the baseline period, described in [Section 3.1.2](#).

#### 3.1.1 Prediction Model

The baseline prices will be calculated using a prediction model that will be calibrated using the national set of baseline episodes described in [Section 1](#) and the baseline episode expenditures described in [Section 2](#). The prediction model will be estimated by regressing baseline episode expenditures on a list of covariates that have been determined to influence episode expenditures. The list of covariates may change over time and includes the following:

- Cancer type (those that are reconciliation-eligible, as defined in the document "[OCM Cancer Type Mapping and Codes](#)")
- Age
- Sex
- Dual eligibility for Medicaid and Medicare

- Selected non-cancer comorbidities
- Receipt of selected cancer-directed surgeries
- Receipt of bone marrow transplant
- Receipt of radiation therapy
- Type of chemotherapy drugs used during episode (only Part D-covered drugs versus some or all Part B-chemotherapy drugs; for breast cancer only)
- Institutional status
- Participation in a clinical trial
- History of prior chemotherapy use
- Episode length
- Hospital referral region

The functional form of the model will be a generalized linear model with a log link and gamma distribution. This type of model is commonly used in predicting health care expenditures and yields only positive predicted values. Because the most recent baseline year is likely to be the most important for predicting future expenditures, baseline expenditures will be weighted in the following manner: for episodes ending in the period July 2012 – June 2013, weight=0.5; for episodes ending in the period July 2013 – June 2014, weight=1.0; for episodes ending in the period July 2014 – June 2015, weight=1.5.

The coefficients from the prediction model will be used to calculate predicted baseline expenditures for each episode identified during the performance period. We will then apply an adjustment reflecting the experience of each practice or pool to each episode's predicted baseline expenditures before calculating the final baseline price. Detailed information about the covariates used in the prediction model is available in [Appendix I](#) and the document "[OCM Prediction Model Code Lists](#)," effective July 1, 2016.

### **3.1.2 Experience Adjuster**

Because the prediction model may not fully control for all factors that affect episode expenditures, an additional adjustment at the practice or pool level will be applied to the predicted baseline expenditures to reflect the relative costliness of each participating practice or pool during the baseline period. The experience adjuster will control for unmeasured selection at the practice or pool. The experience adjuster will be calculated by first using the prediction model to predict the expenditures of each baseline episode for each participating practice or pool, as described above in [Section 3.1.1](#). The average *actual* baseline expenditures will then be compared with the average *predicted* baseline expenditures for each practice or pool. The ratio of actual-to-predicted average baseline expenditures will form the basis for a practice- or pool-specific experience adjuster that will be applied to the predicted baseline expenditures for each episode attributed to each participating practice or pool. Because average expenditures for individual practices tend to move toward average expenditures for all practices over time (a phenomenon known as "regression toward the mean") the ratios of actual-to-predicted average baseline expenditures will not be applied in their entirety to the predicted baseline expenditures. Rather, a weight of 50 percent will be applied to move them closer to a value of 1.0. For example, if the ratio of actual-to-predicted average baseline expenditures for a particular practice is 1.2, we would calculate the experience adjuster for that practice to be 1.1. The formula for this adjustment is:

Experience Adjuster = 50% \* 1 + 50% \* ratio of actual-to-expected average baseline expenditures

Experience adjusters will be calculated for each OCM practice and pool. Should an OCM practice undergo a change in organizational structure, such as an acquisition or merger, during the model, or the composition of an OCM pool change during the model's duration, we will recalculate the experience adjuster to reflect the baseline experience of the newly structured practice or pool. The baseline price for each episode is equal to the predicted baseline expenditures for that episode multiplied by the experience adjuster calculated for that episode's practice or pool.

### **3.2 Benchmark Price (per Episode)**

The benchmark price for each episode is equal to the baseline price multiplied by a trend factor and an adjustment for the use of novel cancer therapies; these adjustments are specific to each practice and pool. The trend factor will reflect underlying secular trends in episode expenditures between the baseline and performance periods. The novel therapy adjustment factor will increase the benchmark price to account for the appropriate use of newly approved oncology therapies; the novel therapy adjustment is applied only in cases where the practice's use of specified novel therapies is greater than that of practices not participating in OCM. The calculation of the trend factor is described below in [Section 3.2.1](#). The calculation of the novel therapy adjustment is described in [Section 3.2.2](#).

#### **3.2.1 Trend Factor**

Trend factors will be derived from expenditures for all episodes attributed to oncology practices not participating in OCM. The population of non-OCM oncology practices will be defined as all TINs with at least one provider with an oncology specialty who provided an E&M visit for cancer care during the performance period.<sup>3</sup> The ratio of non-participating practices' episode expenditures in the performance period to their episode expenditures in the baseline period will constitute the basis for the trend factor. We will use regression analysis to adjust the trend factor to the case mix of each participating practice or pool in the performance period. Specifically, we will estimate separate regression models on *performance period* expenditures among non-participating oncology practices and on *baseline* expenditures among non-participating oncology practices. These regression models will use the same functional form as the prediction model used to calculate the baseline prices and will use the same set of covariates. We will use coefficients from these two models to calculate two sets of predicted expenditures for each participating practice and pool during the performance period. For a given practice or pool, the ratio of predicted performance period expenditures to predicted baseline period expenditures represents the trend factor for that practice or pool. We will multiply the baseline price by the trend factor to calculate the trended baseline price for each episode.

Additional adjustments to the trend factor will be made as needed to account for changes in Federal regulation or other new models.

#### **3.2.2 Adjustment for Novel Therapies**

Benchmark prices may be adjusted to reflect situations where a practice has a higher proportion of expenditures for the use of newly FDA-approved oncology drugs for the cancer types for which they are approved than what is reflected in the trended baseline prices. The FDA approves new oncology therapies each year, many of which are substantially more expensive than existing therapies.

Predicted episode expenditures based on trended historical data may not reflect the relative expense of these newly approved therapies, particularly in situations where a practice has a

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<sup>3</sup> Oncology specialties are Hematology/Oncology, Medical Oncology, Surgical Oncology, Radiation Oncology, and Gynecology Oncology. E&M visits for cancer care are defined as they are in [Section 1.1.2](#) for episode eligibility.

higher proportion of these expenditures than what is reflected in the trended baseline price. A potential adjustment may be available that will be based on the proportion of each practice's or pool's average episode expenditures for these new oncology therapies compared to the same proportion for episodes that are not part of OCM.

To qualify for adjustment, certain criteria would need to be met, including:

1. Only oncology drugs that received FDA approval after December 31, 2014, would be considered for inclusion.
2. Only practices with attributed beneficiaries who received the novel oncology therapies would be potentially impacted.
3. New oncology therapy expenditures will only be considered for adjustment if the use of the novel therapy is consistent with the FDA-approved indications.
4. Oncology drugs will be considered "new" for 2 years from FDA approval for that specific indication for the purpose of the adjustment. The "new" designation may extend past 2 years to align with the OCM reconciliation process.

For each performance period, we will calculate the percentage of actual episode expenditures associated with novel therapies for each practice and pool. As noted in #3 above, to be included in this amount, the use of the specified novel therapies must be consistent with the FDA-approved indications. For Part B drugs, the cost of new oncology drugs includes the full Medicare expenditure amount; for Part D drugs, the relevant costs include the LICS amount and 80 percent of the GDCA (as described in [Section 2.1](#)). This percentage will be compared to the percentage of actual episode expenditures associated with new oncology drugs among all episodes nationally not attributed to participating OCM practices. The population of episodes not attributed to participating OCM practices will be the same as defined for the purposes of calculating the trend factor, described in [Section 3.2.1](#) above. If a given practice's or pool's new oncology drug expenditures as a percentage of its total episode expenditures is higher than that for episodes outside OCM, then an adjustment will be made to the trended baseline prices based on 80 percent of the difference between the practice's or pool's proportion and the non-participating practices' proportion. The novel therapies adjustment may lead to a higher benchmark only; it will never lower a benchmark.

CMS may opt to adjust the calculation of the novel therapies adjustment in the future. Expenditures for certain therapies with lower clinical effectiveness may be adjusted downward when calculating the relative proportion of novel therapy expenditures per episode. Any such adjustments would be applied no earlier than the third performance period reconciliation.

[Appendix F](#) provides an example calculation of the adjustment for the use of novel therapies.

### **3.3 Target Price (per Episode)**

After the adjustments are applied for trend and novel therapies to produce the benchmark price, the OCM discount will be applied to obtain a target price for each episode. The OCM discount is 4 percent under the one-sided risk sharing arrangement and 2.75 percent under the original two-sided risk arrangement. The target price is equal to the benchmark price multiplied by one minus the OCM discount, or,

Target Price = Benchmark Price \* (1 - OCM discount).

### **3.4 Benchmark and Target Amounts (per Practice)**

The benchmark amount is the sum of the benchmark prices for all episodes attributed to the practice for the performance period, as described in [Section 3.2](#). The benchmark amount represents the projection of what the Medicare expenditures would have been during the performance period for episodes attributed to the OCM practice in the absence of OCM participation. The benchmark amount does not include the OCM discount.

The final target amount for each practice is equal to the sum of the target prices for all episodes attributed to the practice for the performance period.

[Appendix G](#) provides a mathematical description of the methodology for calculating target amounts in the performance period.

## **Section 4: Determination of Performance Period Episodes**

The episodes identified and attributed for each performance period will be defined in the same way as those for the baseline period, as described in [Section 1](#). Each performance period, we will identify the national set of episodes meeting OCM criteria and will attribute them to all OCM practices as well as to non-OCM practices (as defined by TIN). The episodes attributed to practices not participating in OCM will be used for the development of the trend factor (see [Section 3.2.1](#)) and the adjustment for the use of novel therapies (see [Section 3.2.2](#)). The episodes attributed to each OCM practice will comprise the population for that practice and the actual episode expenditures associated with the performance period.



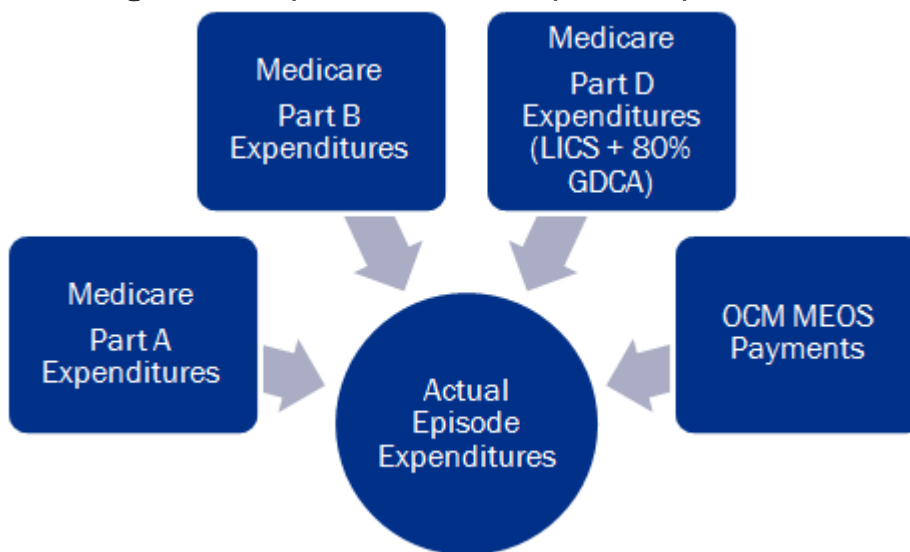
## Section 5: Calculation of Actual Episode Expenditures

Once performance period episodes have been identified and attributed to practices we then add up the Medicare FFS expenditures incurred during each episode. As with the baseline expenditures, actual episode expenditures will include expenditures for all non-MEOS claims where the service date is during the episode. The service date for most claims is the date the beneficiary received the service (referred to as the “from date” on the claim). For Inpatient and SNF claims, the service date is the date the beneficiary was admitted to the facility (the admission date on the claim). For Part D claims the service date is the date the prescription was filled. MEOS claims may be billed during the episode as well as during the 90 days before and after each episode. Therefore, MEOS claims will first be associated with a specific episode and then added to the episode’s expenditures, which could result in MEOS claims being included in an episode’s expenditures that did not have a service date during the episode. No more than six MEOS payments will be included in the expenditures for each episode, and each MEOS payment will only be associated with one episode.

### 5.1 Components of Actual Episode Expenditures

Actual episode expenditures include all Medicare Part A and Part B FFS expenditures (which will include the OCM MEOS payments), certain Part D expenditures, and payments resulting from overlapping participation in other CMS models (see [Figure 2](#) below).

Figure 2: Components of Actual Episode Expenditures



The Part A and Part B expenditures come from the Inpatient, SNF, Outpatient, Carrier, DMEPOS, HHA, and Hospice claims files. As with the baseline episode expenditures, actual Medicare expenditures will be standardized to exclude IME and DSH payments, as well as inpatient pass-through amounts. Part D expenditures come from the Part D claims files and include only the LICS amount and 80 percent of the GDCA. Other Part D expenditures will not be included because they are paid on a capitated basis. The Part A and Part B actual expenditures will be sourced from CMS’ standardized payment files (see [Section 2.1](#)).

Before finalizing the actual episode expenditures, we will apply similar adjustments as those made to the baseline expenditures—an adjustment to account for potential overlap of shared savings or performance-based payments that may be earned through participation in multiple



CMS FFS models ([Section 5.2](#) below), an adjustment to remove the effect of sequestration ([Section 2.3](#)) and the Winsorization adjustment ([Section 2.5](#)). Additional adjustments to the actual episode expenditures will be made as needed to account for changes in Federal regulation or other new models.

## **5.2 Accounting for Model Overlap**

In order to ensure that duplicative incentive payments are not made for the same savings for the same beneficiary, we will follow certain procedures depending on the additional models in which the practice participates. In the event that new CMS models begin during OCM, we will make additional adjustments as needed to account for the overlap between OCM and those new models. We will account for beneficiary overlap with the models listed below in the calculation of actual expenditures.

### ***Medicare Accountable Care Organizations***

OCM practices and practitioners and their attributed beneficiaries may participate in (or, in the case of a beneficiary, be aligned to) a Medicare Shared Savings Program (MSSP), Pioneer, or Next Generation ACO (all programs subsequently referred to as “ACOs”). In all of the OCM actual episode expenditure calculations, we will account for any reductions in FFS payments for OCM beneficiaries aligned to Medicare ACOs that have elected population-based payments by adjusting the standardized paid amount on claims, as necessary, to reflect the amount that would have been paid in the absence of population based-payments. We will not include as an expenditure in an OCM episode the ACO’s monthly payment for OCM beneficiaries aligned to ACOs that have elected population-based payments.

For further accounting of ACO overlap in the performance-based payment calculation, see [Section 6.2.1](#)

### ***BPCI and Comprehensive Care for Joint Replacement (CJR)***

OCM practices, practitioners, and their beneficiaries may participate (or, in the case of a beneficiary, be included) concurrently in BPCI and/or CJR. When a BPCI episode overlaps with an OCM episode, any reductions or increases in expenditures will first accrue to the BPCI episode. After BPCI performs its reconciliation calculations, we will prorate the BPCI reconciliation amount, a non-claims-based payment or recoupment, by the portion of the BPCI episode that overlapped with the OCM episode. This prorated BPCI reconciliation amount will be included in the actual episode expenditures of that OCM beneficiary’s care during the OCM episode. This amount will be added to the OCM actual episode expenditures prior to the application of Winsorization. The same approach will be taken in the event of contemporaneous attribution of a beneficiary to both an OCM episode and a CJR episode.

### ***Medicare Care Choices Model (MCCM)***

OCM practices, practitioners, and beneficiaries may participate (or, in the case of a beneficiary, be included) concurrently in MCCM. MCCM per beneficiary per month (PBPM) payments will be included in the actual episode expenditures of the OCM beneficiary’s care during the OCM episode. No explicit adjustment will be required to be made to the actual expenditures, as the MCCM PBPM payments will appear as individual records in the claims data used to determine the actual episode expenditures.

## Section 6: Calculation of Performance-Based Payments

Performance-based payments will be calculated separately for each OCM practice and pool for each of the nine performance periods defined in [Table 1](#). For each performance period, we will calculate each practice's target amount as described in [Section 3](#) and each practice's actual episode expenditures as described in [Section 5](#). In this section, we describe how we will compare the actual episode expenditures with the target amount to determine if there were expenditure reductions in the performance period and how we will determine the amount of the eligible performance-based payment associated with any expenditure reductions. This process is called reconciliation. We also describe three post-hoc adjustments that will be made to the performance-based payment. Two of these adjustments, geographic variation and sequestration, will apply to all practices and pools. One of them, an adjustment for ACO overlap, will potentially apply to only those OCM participants who are also ACOs. Finally, we discuss the frequency with which the reconciliation process will occur.

### 6.1 Requirements for Receiving a Performance-Based Payment

In order to receive a performance-based payment, the following requirements must be met:

- The practice's target amount exceeds the actual episode expenditures of the episodes attributed to the practice, or, in the case of a pool, the sum of the target amounts for the practices comprising the pool exceeds the sum of the actual episode expenditures of the episodes attributed to the practices in the pool.
- The practice or pool achieves an Aggregate Quality Score (AQS) that meets or exceeds the minimum performance threshold of 30 percent (out of 100 percent). The AQS is equal to the total quality points earned divided by the maximum quality points in the performance period. Information on the quality measures and how quality points are determined is located in [Section 7](#).
- The practice, or, in the case of a pool, each practice in the pool, reports to the OCM Data Registry on all of the required practice-reported quality measures for the performance period, as identified in [Section 7.1](#), [Table 2](#).
- The practice, or, in the case of a pool, each practice in the pool, implements all of the Practice Redesign Activities.

### 6.2 Reconciliation

To determine whether a performance-based payment may be made to an individual practice, we will first compare the practice's actual episode expenditures with its target amount (which reflects the OCM discount) for the performance period. If the actual episode expenditures are lower than the target amount, a performance-based payment may be made, contingent upon quality performance. In this case, we would first determine if the OCM "stop-gain" provision would be triggered. The stop-gain provision limits the reduction in expenditures to which the performance multiplier will be applied. In the one-sided and original two-sided risk arrangements, the reduction in expenditures is limited to no more than 20 percent of the practice's benchmark amount. If the reduction in expenditures is greater than 20 percent of the benchmark amount, it will be set equal to 20 percent of the benchmark amount. See the [OCM PBP Methodology effective July 2, 2017](#) for information on the stop-gain provision for the alternative two-sided risk arrangement, which is available in Performance Period 6 and later. The performance-based payment in all risk arrangements will be equal to the difference between the actual episode expenditures (as

modified by the stop-gain provision, if applicable) and the target amount, multiplied by the performance multiplier, adjusted for geographic variation (see [Section 6.2.1](#)), and reduced for sequestration (required by law), as shown in this formula:

$PBP = (\text{Target} - \text{Actual}) * PM * GA * S$ , where

PBP = performance-based payment

Target - Actual = target amount minus actual episode expenditures, modified by stop-gain

PM = performance multiplier

GA = geographic variation adjustment

S = sequestration (equal to 0.98)

The performance multiplier will be 0 percent, 50 percent, 75 percent, or 100 percent, depending on the practice's or pool's AQS for the performance period. The method for determining the performance multiplier is described in [Section 7](#).

In the first two performance periods, if the actual expenditures are greater than the target amount, no performance-based payment will be made. If the actual expenditures are greater than the target amount and the practice has elected the original two-sided risk sharing arrangement for the performance period, the practice must pay CMS back the difference (called a recoupment), subject to a maximum repayment of 20 percent of the benchmark amount, adjusted for geographic variation and reduced for sequestration. The performance multiplier will not be applied to any recoupment amounts. See the [OCM PBP Methodology effective July 2, 2017](#) for information on recoupment in the alternative two-sided risk arrangement, which is available in Performance Period 6 and later.

### **6.2.1 Geographic Variation Adjustment**

Before calculating the final performance-based payments, we will include an adjustment to account for differences in costs due to geographic location. As described in [Section 2.1](#), we initially remove the effects of geographic variation in the calculation of the target amounts and the actual episode expenditures by using standardized payments, which include adjustments for the CMS Geographic Practice Cost Index (GPCI) and the Hospital Wage Index (HWI), among others. During reconciliation, the geographic variation will be reintroduced by multiplying PBPs by the ratio of actual to standardized payments for the reconciliation-eligible episodes attributed in each performance period, for each practice or pool. This approach directly reverses the effects of standardization, thereby reintroducing the original geographic variation in payments.

### **6.2.2 Adjustment for ACO Overlap**

OCM MEOS payments, performance-based payments, and recoupments will be eligible for inclusion in ACO shared savings calculations in the event that an OCM beneficiary is also aligned to an entity participating as an ACO. However, shared savings calculations for ACOs will not take into account OCM discount amounts, which represent Medicare savings. Thus, CMS will perform separate calculations to identify these amounts. If a portion of the OCM discount is paid out as shared savings to an ACO under the same TIN as an OCM practice, CMS will recover that portion from the OCM practice. The amount to be recovered will be equal to the ACO's shared savings percentage multiplied by the OCM discount amount associated with the overlapping beneficiaries' episodes. See [Appendix J](#) for more details regarding the calculation of the ACO Overlap amount.

Whenever possible, the recoupment amount will be subtracted from the performance-based payment for the current reconciliation. There may be cases where the calculation is unable to be made until after any performance-based payment has been made for the third reconciliation (described below in [Section 6.2.3](#)), in which case the practice would return the amount directly to CMS in the form of an external recoupment.

### **6.2.3 Frequency and Timing**

We will carry out the calculations for each 6-month performance period three times. Each reconciliation will use more claims run-out (that is, claims submitted after the end of the performance period) than the one prior. The first reconciliation will include 2 months of claims run-out, the second reconciliation will include 8 months of claims run-out, and the third and final reconciliation will include 14 months of claims run-out. The results of the second and third reconciliations will be compared with those of the previous reconciliations, possibly resulting in changes to the performance-based payment or recoupment. Differences between the current and previous reconciliations will be added to or subtracted from the current reconciliation amount. If the revised performance-based payment exceeds the original performance-based payment, CMS will make an additional payment to the practice or pool. If the revised performance-based payment is less than the original performance-based payment, the practice or pool will be required to pay back the difference (under one-sided risk, the performance-based payment for a given performance period will never be less than zero).

Calculations for each reconciliation will begin once the last month of run-out for the reconciliation has been received, usually within 6 weeks after the end of the last month of run-out. In general, results of the first reconciliation will be communicated by the eighth month after the end of each performance period. The results of the second and third reconciliations will be communicated 6 and 12 months later, respectively.

### **6.3 Performance-Based Payments for Pools**

The actual expenditures for each pool will be the sum of the actual expenditures for all episodes attributed to the practices in the pool. The quantity to which a pool's actual expenditures will be compared will be the sum of the target amounts for all practices comprising the pool. Likewise, the performance multiplier will be based on the combined experience of all episodes attributed to the practices in the pool, as described in [Section 7.5](#). We will calculate one performance-based payment for the pool, and it will be paid to the pool's designated recipient as specified in the OCM Participation Agreement.

Performance-based payments for pools will be calculated in generally the same manner as described above for individual practices. To determine whether a performance-based payment may be made to a pool, we will first compare the pool's actual episode expenditures with the sum of the target amounts for the performance period for all practices in the pool. If the actual episode expenditures are lower than the sum of the practice target amounts, a performance-based payment may be made, contingent upon quality performance. In this case, we would first determine if the OCM stop-gain provision would be triggered. If the reduction in expenditures is greater than 20 percent of the sum of the benchmark amounts for all practices in the pool, it will be set equal to 20 percent of the sum of the benchmark amounts. See the [OCM PBP Methodology effective July 2, 2017](#) for information on the stop-gain provision for the alternative two-sided risk arrangement, which is available in Performance Period 6 and later. The performance-based payment will be equal to the difference between the actual episode expenditures (as modified by

the stop-gain provision, if applicable) and the sum of the target amounts, multiplied by the performance multiplier, adjusted for geographic variation, and reduced for sequestration (as required by law). The performance multiplier will be 0 percent, 50 percent, 75 percent, or 100 percent, depending on the pool's AQS for the performance period. The method for determining the performance multiplier is described in [Section 7](#).

If the actual expenditures are greater than the sum of the target amounts, no performance-based payment will be made. If the actual expenditures are greater than the target amount and the pool has elected the two-sided risk sharing arrangement for the performance period, the pool must pay CMS back the difference (called a recoupment), subject to a maximum repayment of 20 percent of the sum of the benchmark amounts, adjusted for geographic variation and reduced for sequestration. The performance multiplier will not be applied to any recoupment amounts. See the [OCM PBP Methodology effective July 2, 2017](#) for information on recoupment in the alternative two-sided risk arrangement, which is available in Performance Period 6 and later.

## Section 7: Quality Measures and the Performance Multiplier

As described above in [Section 6](#) the final calculation of performance-based payment requires the application of a performance multiplier. This multiplier will determine the percentage of eligible performance-based payment (0 percent to 100 percent) that may be paid to each practice or pool. The multiplier will be based on the AQS constructed from each practice’s or pool’s performance on the quality measures. In [Section 7.1](#), we describe the OCM quality measures and how they contribute to the determination of the performance multiplier. In [Section 7.2](#) we describe the approach for calculating the measure performance rates. In [Section 7.3](#), we describe the methods that will be used to assign quality points to each measure and to calculate the AQS. In [Section 7.4](#) we address cases of inapplicable measures and measures with insufficient denominators. Finally, in [Section 7.5](#) we address scoring for pooled practices. This section includes information on quality scoring in only the first two performance periods. For information on quality scoring for later performance periods, see the [OCM PBP Methodology paper effective July 2, 2017](#).

### 7.1 Quality Measures and Quality Points

The performance multiplier will be based on a set of 12 measures that fall into four domains, shown in [Table 2](#).<sup>4</sup> These measures were chosen after an extensive literature review, a review by a Technical Expert Panel, discussions with CMS, and consideration of alignment with other quality reporting efforts, including the Physician Quality Reporting System (PQRS). Measures are derived from claims, the OCM Data Registry (as reported by practices), and a patient experience of care survey that a CMS contractor will field.

**Table 2: Measures to Be Used in OCM Performance Multiplier**

Measure Name	OCM Measure Number	Measure Source
<b>Communication and Care Coordination</b>		
Risk-adjusted proportion of patients with all-cause hospital admissions within the 6-month episode	OCM-1	Claims
Risk-adjusted proportion of patients with all-cause emergency department visits or observation stays that did not result in a hospital admission within the 6-month episode	OCM-2	Claims
Proportion of patients who died who were admitted to hospice for 3 days or more	OCM-3	Claims
<b>Person- and Caregiver-Centered Experience and Outcomes</b>		
Pain Assessment and Management Composite <sup>1</sup>	OCM-4	Registry (practice-reported)
Preventive Care and Screening: Screening for Depression and Follow-Up Plan (CMS 2v6.3, NQF 0418)	OCM-5	Registry (practice-reported)
Patient-Reported Experience of Care	OCM-6	Survey
<b>Clinical Quality of Care</b>		

<sup>4</sup> OCM-7 was retired effective with the March 2018 reporting period and will only be used in the quality scoring for Performance Period 1. OCM-8 through OCM-11 were retired effective with the March 2019 reporting period and will only be used in the quality scoring for Performance Periods 1 – 3.



Measure Name	OCM Measure Number	Measure Source
Prostate Cancer: Adjuvant Hormonal Therapy for High or Very High-Risk Prostate Cancer (PQRS 104, NQF 0390) <sup>2</sup>	OCM-7	Registry (practice-reported)
Adjuvant chemotherapy is recommended or administered within 4 months (120 days) of diagnosis to patients under the age of 80 with AJCC III (lymph node positive) colon cancer (NQF 0223) <sup>3</sup>	OCM-8	Registry (practice-reported)
Combination chemotherapy is recommended or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0M0, or Stage IB - III hormone receptor negative breast cancer (NQF 0559) <sup>3</sup>	OCM-9	Registry (practice-reported)
Trastuzumab administered to patients with AJCC stage I (T1c) - III and human epidermal growth factor receptor 2 (HER2) positive breast cancer who receive adjuvant chemotherapy (NQF 1858) <sup>3</sup>	OCM-10	Registry (practice-reported)
Breast Cancer: Hormonal Therapy for Stage I (T1b)-IIIC Estrogen Receptor/Progesterone Receptor (ER/PR) Positive Breast Cancer (CMS 140v5.0, NQF 0387) <sup>3</sup>	OCM-11	Registry (practice-reported)
<b>Patient Safety</b>		
Documentation of Current Medications in the Medical Record (CMS 68v6.1, NQF 0419)	OCM-12	Registry (practice-reported)

1. The composite measure, OCM-4, is comprised of two measures: OCM-4a, Oncology: Medical and Radiation – Pain Intensity Quantified (PQRS 143, NQF 0384), and OCM-4b, Oncology: Medical and Radiation – Plan of Care for Pain (PQRS 144, NQF 0383).

2. OCM-7 was retired effective with the March 2018 reporting period.

3. OCM-8 – OCM-11 were retired effective with the March 2019 reporting period.

[Table 3](#) summarizes the approach for phasing in the measures. In the first five performance periods there will be a mix of pay-for-reporting (P4R) and pay-for-performance (P4P) measures. P4R measures require only that each practice report data on a sufficient number of beneficiaries for the practice or pool to receive quality points. P4P measures are assigned quality points based on the practice or pool’s performance as compared to set thresholds, called quality benchmarks.

For episodes ending in the first performance period, the three claims-based measures are P4P and five practice-reported measures (OCM-7 – OCM-11) are P4R. Note that the patient-reported experience of care measure (OCM-6) and three of the practice-reported measures (OCM-4, OCM-5, and OCM-12) *are not included* in the first performance period scoring.

For episodes ending in the second performance period, the three claims-based measures are P4P and seven practice-reported measures (OCM-4, OCM-5, and OCM-8 – OCM-12) are P4R (OCM-7 is retired as of the second performance period). The patient-reported experience of care measure (OCM-6) is not included in the second performance period scoring.

For episodes ending the third performance period and later, see the [OCM PBP Methodology paper effective July 2, 2017](#) for the measures included in quality scoring.

In [Table 3](#), “R” indicates only reporting of the measure will be required for the performance period, and “P” indicates the measure will be scored by comparison with a threshold (described in [Section 7.3](#) below) for the performance period.

**Table 3: OCM Measure Phase-in**

OCM Measure Number	PP1	PP2
OCM-1	P	P
OCM-2	P	P
OCM-3	P	P
OCM-4	--	R
OCM-5	--	R
OCM-7	R	--
OCM-8	R	R
OCM-9	R	R
OCM-10	R	R
OCM-11	R	R
OCM-12	--	R
# Measures	8	10

[Table 4](#) shows the maximum number of points available for each measure in each performance period.

**Table 4: Maximum Points per Measure per Performance Period**

OCM Measure Number	PP1	PP2
OCM-1	10	10
OCM-2	10	10
OCM-3	10	10
OCM-4	--	2.5
OCM-5	--	2.5
OCM-7	2.5	--
OCM-8	2.5	2.5
OCM-9	2.5	2.5
OCM-10	2.5	2.5
OCM-11	2.5	2.5
OCM-12	--	2.5
Total	42.5	47.5

All P4P measures will have a maximum of 10 points available for each, and all P4R measures will have a maximum of 2.5 points available for each.

In the first performance period, there will be a maximum of 42.5 points available, 30 of which will come from P4P measures and 12.5 of which will come from P4R measures. Scoring in the first performance period will be calculated as follows:

- Maximum of 30 points for P4P measures (3 measures \* 10 points each).
- Maximum of 12.5 points for P4R measures (5 measures \* 2.5 points each).
- Maximum of 42.5 points total.



In the second performance period, there will be a maximum of 47.5 points available, 30 of which will come from P4P measures and 17.5 of which will come from P4R measures. Scoring in the second performance period will be calculated as follows:

- Maximum of 30 points for P4P measures (3 measures \* 10 points each).
- Maximum of 17.5 points for P4R measures (7 measures \* 2.5 points each).
- Maximum of 47.5 points total.

See the [OCM PBP Methodology paper effective July 2, 2017](#) for information on points available in the third and later performance periods.

In each performance period, we will calculate the AQS for each practice and pool, expressed as a percent ranging from 0 to 100, which will equal the sum of the points earned on all applicable measures divided by the maximum number of points available. The performance multiplier will depend upon the AQS. [Section 7.2](#) describes how performance rates are calculated for each measure, and [Section 7.3](#) describes how the reporting and performance rates determine the number of points earned for each measure.

### 7.2 Performance Rates

Performance rates on P4P measures will be calculated according to the specifications for each measure. Performance rates for claims-based measures (OCM-1 – OCM-3) will be calculated using Medicare administrative data only. Performance rates for practice-reported measures (OCM-4, OCM-5, and OCM-12) will be calculated using data submitted to the OCM Data Registry by OCM practices.

Because certain measures may not generate denominators that are high enough to calculate stable performance rates in one 6-month performance period, we will use the average episode-weighted performance rate over two performance periods to calculate the quality score for all quality measures. Each calculation will cover the current performance period and the prior one. We will add the denominators and numerators from the current and prior performance periods and calculate one performance rate for each measure. This should help reduce the number of cases where a measure denominator is too low to calculate a statistically reliable performance rate with only 6 months of data. For all measures scored on a P4P basis in the first two performance periods, the required denominator size is 20 (i.e., 20 episodes, 20 visits, etc.) in the two performance periods combined. See [Section 7.4](#) for the treatment of measures where the denominator does not meet the minimum requirement. Only the claims-based measures will be scored based on performance in the first performance period, where there is no prior performance period with which to average. In this case, the performance rate will include episodes terminating during the first half of 2016 as well as those terminating during the first performance period (first half of 2017).<sup>5</sup>

Since the model measures financial performance during 6-month episodes of chemotherapy, quality performance will also be based on 6-month episodes to the extent possible. As written

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<sup>5</sup> Ideally, we would average episodes ending in the first half of 2017 with those ending in the last half of 2016, to use consecutive performance periods. However this would cause significant overlap in episodes used, double-counting the same experience, since episodes will be defined anew for the first performance period. If the set of episodes that is averaged with those in the first performance period is limited to those ending in the first half of 2016 (rather than the second half), we avoid this potential for double-counting.

above, each quality performance calculation will average the performance rates of the current performance period with the performance rates of the previous performance period. As such, measure calculations will include the applicable patients with episodes in those two performance periods and will include events for those patients occurring during their 6-month episodes, again, to the extent possible. In the context of this paper, “applicable patients” refers to the patients who qualify for a particular measure (for example, the breast cancer measures do not apply to patients who do not have breast cancer).

### 7.3 Measure Scoring and Aggregate Quality Score

The process of assigning quality points to each measure, called “scoring,” will be based on practices’ reporting and/or quality performance relative to set thresholds. Reporting performance is based on whether the practice reported data to the OCM Data Registry.

Performance thresholds will be determined based on the best data available for each type of measure. If national data are available, they will be employed first to set performance thresholds. If national data are not available (e.g., the patient-reported experience of care measure, for which there is no national data at this time) we will use other sources of information to set the thresholds. In the sections below ([Section 7.3.1](#), [Section 7.3.2](#), and [Section 7.3.3](#)) we describe the scoring approach for each measure type (claims-based, practice-reported, and patient-reported).

#### 7.3.1 Claims-Based Measure Scoring

Performance thresholds for claims-based measures were determined using national historical Medicare claims data for OCM participating and non-participating practices. We developed a distribution of performance for all practices nationally to which episodes were attributed, following the same episode identification and attribution specifications defined in [Section 1](#). The six performance periods covered by the OCM 3-year baseline time frame were aggregated into three 12-month periods, called “practice-years.” Each practice-year contributed to the threshold calculations if at least a minimum number of episodes was attributed to it – a minimum of 100 episodes for OCM-1 and OCM-2 and a minimum of 20 episodes ending in death for OCM-3. Using this distribution, we set performance thresholds at each quintile. These quintiles determine the number of points awarded for each measure.

See [Table 5](#) for the point structure that applies to each claims-based measure. For OCM-3, a higher rate on the performance measure results in a higher number of points being assigned. However, it is important to note that OCM-1 and OCM-2 have a reverse scoring structure, where a lower rate on the performance measure indicates better quality and therefore results in a higher number of points being assigned. This reverse scoring structure is reflected in the performance thresholds in the document “[OCM Claims Based Quality Measure Benchmarks](#),” available on [healthcarecommunities.org](http://healthcarecommunities.org).

**Table 5: Scoring of Claims-Based Measures**

OCM-1 and OCM-2: Quality Performance Rate (P)	OCM-1 and OCM-2: Points Assigned	OCM-3: Quality Performance Rate (P)	OCM-3: Points Assigned
P ≤ 20 <sup>th</sup> Percentile	10	P ≥ 80 <sup>th</sup> Percentile	10
20 <sup>th</sup> Percentile < P ≤ 40 <sup>th</sup> Percentile	7.5	60 <sup>th</sup> Percentile ≤ P < 80 <sup>th</sup> Percentile	7.5
40 <sup>th</sup> Percentile < P ≤ 60 <sup>th</sup> Percentile	5	40 <sup>th</sup> Percentile ≤ P < 60 <sup>th</sup> Percentile	5

OCM-1 and OCM-2: Quality Performance Rate (P)	OCM-1 and OCM-2: Points Assigned	OCM-3: Quality Performance Rate (P)	OCM-3: Points Assigned
60 <sup>th</sup> Percentile < P ≤ 80 <sup>th</sup> Percentile	2.5	20 <sup>th</sup> Percentile ≤ P < 40 <sup>th</sup> Percentile	2.5
P > 80 <sup>th</sup> Percentile	0	P < 20 <sup>th</sup> Percentile	0

### 7.3.2 Practice-Reported Measure Scoring

In the first and second performance periods, the required practice-reported measures (five measures in the first performance period and seven measures in the second performance period) will be P4R. Below we describe the approach we will use to score practice-reported measures when they are P4R.

#### *Pay-for-reporting*

In all performance periods in which the OCM FFS Beneficiary and Practice-Level (All Payer) measures (OCM-4, OCM-5, OCM-7 – OCM-12) are P4R, practices will receive the maximum number of reporting points (2.5) for those measures, as long as they have reported the measure, except in cases where the practice has no attributed OCM episodes for a Practice-Level (All Payer) measure’s (OCM-7 – OCM-11) cancer type. For example, if a practice has no colon cancer episodes, OCM-8 will be inapplicable for that practice and will be excluded from scoring (see [Section 7.4](#) for more information). Please note that CMS may reduce or eliminate a practice’s reporting points in the event that an audit of a practice’s medical records demonstrates that the quality measure data reported were not complete or accurate. For more information on the Practice-Level (All Payer) and OCM FFS Beneficiary measures, see the OCM Quality Measures Guide.

#### *Pay-for-performance*

There is no P4P for the practice-reported measures in the first and second performance periods. For information on P4P scoring of practice-reported measures in subsequent performance periods, see the [OCM PBP Methodology paper effective July 2, 2017](#).

The AQS for each performance period will be based on the OCM FFS Beneficiary and Practice-Level (All Payer) measure results reported by each respective reporting deadline. Neither the OCM FFS Beneficiary measures nor the Practice-Level (All Payer) measures will be updated after attribution is received or in the first or second true-up of each performance period.

[Table 6](#) shows which registry data will be used in the scoring of the practice-reported measures for each performance period.

**Table 6: Registry Data Used in Scoring Practice-Reported Measures, by Performance Period**

Performance Period	Measurement Period(s)	Reporting Deadline(s)
1	January – June, 2017	October 2017
2	July – December, 2017	April 2018

### 7.3.3 Patient Experience of Care Scoring

For information on the scoring of OCM-6, Patient Experience of Care, see the [OCM PBP Methodology paper, effective July 2, 2017](#).

**Table 7: Survey Waves Used in Scoring OCM-6, by Performance Period**

Table has been removed. See the [OCM PBP Methodology paper, effective July 2, 2017](#).

### 7.3.4 Aggregate Quality Score

After points have been determined for each measure, all earned points will be summed and divided by the practice’s or pool’s total possible points to calculate the AQS. Practices or pools will then be awarded performance-based payments by comparing their AQS to a payment scale to determine the performance multiplier (in the case where the target amount exceeds the average episode expenditures in the performance period). [Table 8](#) shows a mapping of the AQS to the performance multiplier.

**Table 8: Aggregate Quality Score Translated into Performance Multiplier**

Aggregate Quality Score (% of maximum points available)	Performance Multiplier
75% – 100%	100%
50% – 74%	75%
30% – 49%	50%
Less than 30%	0%

In order to receive a performance-based payment, practices must have reported all applicable measures for the performance period to the OCM Data Registry, per the OCM Participation Agreement. A practice or pool that scores above the 30 percent minimum in [Table 8](#), but does NOT report sufficiently to the OCM Data Registry, will not receive a performance-based payment.

In [Table 9](#), we show two examples of the quality score calculation, one for the first performance period and one for the second performance period.

**Performance Period 1 Example:** Assume that a practice reports all P4R measures in Performance Period 1, as in the “Performance Period 1 Example” columns in [Table 9](#). The practice receives the maximum number of points for the P4R measures ( $2.5 * 5 = 12.5$  points). The practice also earns 7.5 quality points for each P4P measure ( $7.5 * 3 = 22.5$  points). The sum of all quality points is 35 and the AQS is 82.3 percent (equal to 35 divided by 42.5). The practice would earn 100 percent of the eligible performance-based payment (if actual expenditures are lower than the target amount) for that performance period.

**Performance Period 2 Example:** Assume that a practice earns points for each measure as in the “Performance Period 2 Example” columns in [Table 9](#) and that it reported all measures in the performance period. The sum of all quality points is 37.5 and the AQS is 78.9 percent (equal to 37.5 divided by 47.5). The practice would earn 100 percent of the eligible performance-based payment (if actual expenditures are lower than the target amount) for that performance period.

Table 9: Illustrative Quality Scoring Examples

OCM Measure Number	Perf. Period 1 Example, Points Earned	Perf. Period 1 Example, Maximum Points	Perf. Period 2 Example, Points Earned	Perf. Period 2 Example, Maximum Points
OCM-1	7.5	10	7.5	10
OCM-2	7.5	10	5	10
OCM-3	7.5	10	7.5	10
OCM-4	--	--	2.5	2.5
OCM-5	--	--	2.5	2.5
OCM-7	2.5	2.5	--	--
OCM-8	2.5	2.5	2.5	2.5
OCM-9	2.5	2.5	2.5	2.5
OCM-10	2.5	2.5	2.5	2.5
OCM-11	2.5	2.5	2.5	2.5
OCM-12	--	--	2.5	2.5
P4R Points	12.5	12.5	17.5	17.5
P4P Points	22.5	30	20	30
Total Points	35	42.5	37.5	47.5
AQS	82.3%	--	78.9%	--
Performance Multiplier	100%	--	100%	--

#### 7.4 Inapplicable Measures and Measures with Insufficient Denominator Size

We anticipate that OCM will include practices of varying sizes and specialties. As such, there may be practices that either 1) do not have enough episodes in the performance rate calculation to provide a statistically reliable denominator, or 2) do not treat patients with the type of cancer for which a measure is defined. For example, urology practices may not have breast or colon cancer episodes attributed, yet in some performance periods OCM includes four quality measures that are specific to breast and colon cancers.

If a practice or pool has no beneficiaries that meet the criteria for inclusion in the denominator of a practice-reported measure, we will exclude that measure from the calculation of the AQS for that performance period. Using the second performance period and a urology practice that sees no breast or colon cancer patients as an example, rather than having a maximum of 47.5 points available, the practice would have a maximum of 42.5 points available. Scoring on all other measures would remain as described previously.

In the same way, if a practice or pool does not have enough episodes in the calculation of the two-performance period average to comprise a minimum denominator of 20, we will exclude that measure from the calculation of that practice’s or pool’s AQS for that performance period.

#### 7.5 Scoring for Pooled Practices

OCM pools that are made up of more than one practice will have all of their episodes treated as if they belong to one practice for the purposes of quality scoring. This means we will sum the numerators and denominators for each practice in the pool before calculating pooled performance rates for each measure. For the patient experience of care measure, which is calculated at the practice level, we will calculate a weighted average of aggregate patient

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experience of care scores across all practices in the pool. The number of episodes in each practice during the performance period will serve as the weight. These methods implicitly or explicitly weight the performance for each practice in the pool by the number of episodes attributed to the practice in the performance period. The points for each pooled performance rate will be assigned and summed to produce the AQS in the same way as for individual practices.

## Section 8: Example

The following example illustrates the calculation of the performance-based payment under the one-sided and two-sided risk arrangements. The example is for illustrative purposes only and does not necessarily reflect the experience expected during any given performance period.

In this example, the sum of baseline episode prices is calculated as \$2.5 million for a practice with approximately 100 episodes. After application of a trend factor of 1.02 and an adjustment for novel therapies of 1.01, the benchmark amount is \$2.576 million. After application of the OCM discount rate, the target amount is \$2,472,480 for the performance period for the one-sided risk arrangement (4 percent discount) and \$2,504,674 for the original two-sided risk arrangement (2.75 percent discount). The practice’s actual episode expenditures for the performance period are \$2.3 million and the performance multiplier is 75 percent. The performance multiplier is multiplied by the difference between the target amount and the actual episode expenditures to arrive at the performance-based payment for the practice. Finally, a geographic adjustment of 1.03 and the sequestration adjustment of 2 percent are applied to calculate the final performance-based payment of \$130,576 under the one-sided risk arrangement and \$154,948 under the original two-sided risk arrangement.

**Table 10: Example Performance-Based Payment Calculation**

		One-Sided Risk	Original Two-Sided Risk
A	Sum of Baseline Episode Prices	\$2,500,000	\$2,500,000
B	Adjustment for Trend	1.02	1.02
C	Adjustment for Novel Therapies	1.01	1.01
D	Benchmark Amount (A * B * C)	\$2,575,500	\$2,575,500
E	OCM Discount Rate	4.00%	2.75%
F	OCM Discount Amount (D * E)	\$103,020	\$70,826
G	Target Amount (D - F)	\$2,472,480	\$2,504,674
H	Actual Episode Expenditures	\$2,300,000	\$2,300,000
I	Difference (Target less Actual; G - H)	\$172,480	\$204,674
J	Performance Multiplier	75%	75%
K	Performance-Based Payment (I * J)	\$129,360	\$153,505
L	Final Performance-Based Payment, after Geographic Adjustment and Sequestration (K * 1.03 * 0.98)	\$130,576	\$154,948

## **Section 9: OCM Resources**

OCM Connect: <https://app.innovation.cms.gov/OCMConnect> (for model participants only)

CMS OCM Website: <https://innovation.cms.gov/initiatives/Oncology-Care>

OCM Participant Portal <https://app.innovation.cms.gov/ocmpost>

OCM Support [OCMSupport@cms.hhs.gov](mailto:OCMSupport@cms.hhs.gov)

1-844-711-2664 (1-844-711-CMMI), Option 2



## Appendix A: Specifications for Episode Identification

Below are the detailed specifications for identifying initial and subsequent episodes in a performance period. Performance periods will be defined as in [Table 1](#).

- Step 1: Identify all possible claims that could trigger an episode ending in the performance period.
  - Carrier, DMEPOS (identification at the line level):
    - The claim must contain a line item HCPCS code indicating an included chemotherapy drug (initiating cancer therapy) in any line item.
    - The chemotherapy drug line item must have a “line first expense date” in the appropriate 6 month “Episodes Beginning” period in [Table 1](#), inclusive of end dates.
    - The chemotherapy drug line item must not be denied (line allowed charge >0).
    - The chemotherapy drug line place of service must not be an inpatient hospital (21).
    - The chemotherapy drug claim must contain an included cancer diagnosis code (see “[OCM Cancer Type Mapping and Codes](#)”) either:
      - 1) In any non-denied line item on the same claim (does not have to be same line as HCPCS code above) OR
      - 2) Anywhere in the claim header AND contains ICD10 code Z51.11 or Z51.12 or ICD9 code V58.11 or V58.12 as the principal diagnosis in the claim header.
    - The trigger date is the line first expense date on the qualifying chemotherapy drug line.
  - Outpatient (identification at the claim level):
    - The claim must contain a HCPCS code indicating an included chemotherapy drug (initiating cancer therapy) in any revenue center.
    - The “revenue center date” on the same revenue center in which the HCPCS code is found must be in the appropriate 6 month “Episode Beginning” period in [Table 1](#), inclusive of end dates.
    - The claim must not be denied (Medicare non-payment reason code is not blank).
    - The revenue center in which the HCPCS code is found must not be denied (“revenue center total charge amount” minus “revenue center non-covered charge amount” > 0).
    - The claim header must contain an included cancer diagnosis code (see “[OCM Cancer Type Mapping and Codes](#)”).
    - The trigger date is the revenue center date.
  - Part D (identification at the claim level):
    - The claim must contain an included chemotherapy drug (initiating cancer therapy) NDC code.
    - The claim “fill date” must be in the appropriate 6 month “Episode Beginning” period in [Table 1](#), inclusive of end dates.
    - A non-denied Carrier (line allowed charge >0) or Outpatient (Medicare non-payment reason code is not blank) claim with an included cancer diagnosis code

(see “[OCM Cancer Type Mapping and Codes](#)”) in any line item (Carrier) or in the header (Outpatient) can be found on the fill date or in the 59 days preceding the fill date. Use line first expense date on the Carrier claims and from date on the Outpatient claims to determine if the claim occurred on the fill date or in the 59 days prior.

- The trigger date is the fill date on the PDE claim.

- Step 2: Identify potential episodes

- For each potential trigger claim identified in Step 1, flag whether the 6 months following the trigger date meet the three criteria below. Episodes will be end-dated 6 calendar months after the trigger date, even in the case of death before 6 months. A trigger claim initiates an episode only when all of the below criteria are met.
  - For all performance periods, the potential episode trigger date must not be included in any episode defined for a prior performance period.<sup>6</sup> Potential trigger claims occurring inside a previously defined episode cannot trigger a new episode.
  - The 6 month period beginning with the trigger date must contain a non-denied Carrier claim with an E&M visit (HCPCS code 99201 – 99205, 99211 – 99215) AND an included cancer diagnosis code (see “[OCM Cancer Type Mapping and Codes](#)”) on the same line item.
  - The beneficiary must meet the criteria below for the entire 6-month period (or until death) beginning with the trigger date, inclusive of end dates:
    - Beneficiary is enrolled in Medicare Parts A and B;
    - Beneficiary does not receive the Medicare ESRD benefit, as determined by the Medicare Enrollment Database;
    - Beneficiary has Medicare as his or her primary payer;
    - Beneficiary is not covered under Medicare Advantage or any other group health program.

- Step 3: Identify final set of episodes.

- For each unique beneficiary, identify the first potential episode from Step 2 meeting all three criteria.
  - Apply the following hierarchy if there is more than one trigger claim on the same day from different types of service: Outpatient, Carrier, DMEPOS, Part D
  - If there is still more than one trigger claim on the same day within the same type of service, choose the claim with the first claim ID.
- This is the episode for the current performance period, and could be the beneficiary’s first episode in OCM or an episode subsequent to an episode defined for a prior performance period. Identify the beginning and ending dates of the episode.

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<sup>6</sup>The model will only define episodes that began on or after July 1, 2016.

## Appendix B: Specifications for Assignment of Cancer Type

- Step 1: Identify all visits that count toward the assignment of a cancer type. Qualifying visits:
  - Appear in the Carrier claims file (i.e., have been billed on the CMS-1500 or electronic equivalent);
  - Are identified at the line item level (because visits on different days may be billed on a single claim);
  - Have a “line first expense date” occurring between the episode beginning and ending dates, inclusive of begin and end dates;
  - Have a HCPCS code in the range 99201 – 99205 or 99211 – 99215, which indicates an E&M service;
  - Have “line allowed charge” > 0, indicating that the line service was not denied by Medicare;
  - Have a diagnosis code in the list of included cancer diagnoses (see “[OCM Cancer Type Mapping and Codes](#)”) on the same line as the E&M visit.
- Step 2: Identify unique visits and count the number of visits associated with each cancer type.
  - Map the diagnosis code on the E&M line to a cancer type as defined in the document “[OCM Cancer Type Mapping and Codes.](#)”
  - For the purposes of assigning a cancer type to the episode, a visit is defined by the unique combination of beneficiary ID, TIN, line first expense date, and cancer type associated with the diagnosis code on the line.
  - The TIN is the taxpayer identification number on the same line as the qualifying E&M visit.
  - This step should result in a file of visit counts by unique beneficiary-cancer type combinations.
- Step 3: Assign the episode the cancer type that has the most visits.
  - In the event of a tie, apply tie-breakers in the order below. Assign the cancer type associated with:
    - The most recent visit in the episode, second most recent visit, third most recent visit, etc.;
    - The cancer type that is reconciliation-eligible;
    - The lowest last digit of the TIN;
    - The highest claim ID.

## Appendix C: Specifications for Episode Attribution

- Step 1: Identify all visits that count toward attribution. Qualifying visits:
  - Appear in the Carrier claims file (i.e., have been billed on the CMS-1500 or electronic equivalent);
  - Are identified at the line item level (because visits on different days may be billed on a single claim);
  - Have a “line first expense date” occurring between the episode beginning and ending dates, inclusive of begin and end dates;
  - Have a HCPCS code in the range 99201 – 99205 or 99211 – 99215, which indicates an E&M service;
  - Have “line allowed charge” > 0, indicating that the line service was not denied by Medicare;
  - Have a diagnosis code in the list of included cancer diagnoses (see “[OCM Cancer Type Mapping and Codes](#)”) on the same line as the E&M visit.
  
- Step 2: Count the number of qualifying visits to each TIN.
  - A visit is defined by the unique combination of beneficiary ID, TIN, and line first expense date.
  - Assign the visit to the TIN on the same line as the qualifying E&M visit. A TIN will either be associated with an OCM ID or it will not.
  - Sum the number of visits by beneficiary and TIN (in the case of non-OCM practices) or OCM ID (in the case of OCM practices). In the baseline period, in cases where an OCM ID has more than one TIN (i.e., a current and legacy TIN), sum the visits over all TINs associated with the OCM ID. (In a performance period, an OCM practice is always defined by one OCM ID and one TIN.)
  - This step results in a file of visit counts by unique beneficiary-TIN/OCM ID combinations.
  
- Step 3: Attribute the episode to the TIN or OCM ID with the most qualifying visits.
  - In the event of a tie, apply tie-breakers in the order below. Attribute the episode to the TIN/OCM ID with:
    - The most recent visit in the episode, second most recent visit, third most recent visit, etc.
    - The lowest last digit of the TIN, second lowest digit, etc.
  - In cases where practices have pooled together for the purposes of reconciliation, continue to attribute episodes to the individual OCM IDs within the pool. Do not combine visits across the OCM IDs in the pool for the purposes of determining plurality.

## Appendix D: Baseline Trend Adjustments

The baseline trend adjustments were created to move all episode expenditures to the same level as the expenditures for episodes ending in the most recent 6-month baseline period (1/1/2015 – 6/30/2015). The adjustments reflect the impact of inflation and any changes in episode expenditures due to evolving patterns of care, Medicare payment policies, etc. during the baseline period. The adjustment factor for a given period was calculated by dividing average, un-Winsorized expenditures for episodes ending in the period 1/1/2015 – 6/30/2015 by the average, un-Winsorized expenditures for episodes ending in the period to be adjusted. The adjustment factor was then applied to the expenditures of each episode in the period undergoing adjustment. This brought all baseline episode expenditures forward to the latest 6-month baseline period. The baseline trend adjustments are shown below.

**Table D-1: Baseline Trend Adjustments**

Episode Ending Dates	Number of Episodes	Average Episode Expenditures <sup>1</sup>	Baseline Trend Adjustment
7/1/2012 – 12/31/2012	514,672	\$22,856.50	1.105321421
1/1/2013 – 6/30/2013	427,065	\$23,496.26	1.075225552
7/1/2013 – 12/31/2013	451,867	\$23,925.06	1.055954525
1/1/2014 – 6/30/2014	422,036	\$24,110.03	1.047853285
7/1/2014 – 12/31/2014	448,353	\$24,911.80	1.014128936
1/1/2015 – 6/30/2015	424,303	\$25,263.78	1.000000000

<sup>1</sup> Standardized, un-Winsorized dollars

## Appendix E: Baseline Winsorization Adjustments

Winsorization is a two-sided truncation adjustment that limits the impact of outliers on predicted and actual expenditures, as explained in Section 2.5. Baseline episode expenditures are Winsorized at the 5th and 95th percentiles by cancer type. Specifically, episode expenditures below the 5th percentile by cancer type were set to the 5th percentile, and episode expenditures above the 95th percentile were set to the 95th percentile within cancer type. The Winsorization adjustments occur after baseline trending.

Winsorization thresholds for the 5<sup>th</sup> and 95<sup>th</sup> percentiles are listed in Table E-1 by cancer type.

Table E-1: Winsorization Thresholds

Cancer type	5 <sup>th</sup> Percentile of Episode Expenditures <sup>1</sup>	95 <sup>th</sup> Percentile of Episode Expenditures <sup>1</sup>
Acute Leukemia	\$7,696.68	\$151,753.82
Anal Cancer	\$7,335.72	\$81,645.13
Bladder Cancer	\$1,709.81	\$55,445.78
Breast Cancer	\$461.78	\$54,152.40
CNS Tumor	\$8,743.83	\$98,706.62
Chronic Leukemia	\$3,976.33	\$90,575.63
Endocrine Tumor	\$1,976.91	\$84,243.18
Female GU Cancer other than Ovary	\$2,259.87	\$65,590.59
Gastro/Esophageal Cancer	\$7,866.79	\$91,342.37
Head and Neck Cancer	\$4,959.34	\$92,390.94
Kidney Cancer	\$3,739.55	\$83,823.80
Liver Cancer	\$7,254.20	\$81,291.99
Lung Cancer	\$7,385.14	\$85,695.61
Lymphoma	\$7,700.12	\$98,604.74
MDS	\$11,227.02	\$108,907.63
Malignant Melanoma	\$2,596.87	\$168,785.17
Multiple Myeloma	\$11,176.96	\$99,209.48
Ovarian Cancer	\$3,818.05	\$72,835.81
Pancreatic Cancer	\$6,869.85	\$77,767.64
Prostate Cancer	\$1,308.53	\$55,235.94
Small Intestine/Colorectal Cancer	\$6,236.46	\$86,716.91

<sup>1</sup> Standardized, trended dollars

## Appendix F: Specifications for the Novel Therapies Adjustment

The adjustment for the use of novel therapies will be calculated based on the proportion of each practice's or pool's average episode expenditures for specified new oncology drugs compared to the same proportion for episodes that are not part of OCM. The method is described below.

- Step 1: Calculate Proportion of Episode Expenditures for Specified Novel Therapies at the Practice or Pool
  - A = the actual episode expenditures for all services for all episodes attributed to the practice or pool during the same performance period.
  - B = the actual episode expenditures associated with the new oncology therapies for all episodes attributed to a practice or pool where the cancer type assigned to the episode is the same as the cancer type for which the FDA has approved the new therapy.
  - C = the expenditures associated with the new oncology chemotherapy drugs as a proportion of actual episode expenditures. C equals B divided by A.
- Step 2: Calculate Proportion of Episode Expenditures for Specified Novel Therapies at All Non-Participating Practices
  - Perform the same calculations in Step 1 for the non-participating practices for the same time period. This is the amount that should already be incorporated into the overall trend factor for the specific therapies.
- Step 3: Compare Relative Proportions and Calculate Difference
  - Compare the proportions in Steps 1 and 2. If the proportion calculated for the non-participating practices is greater than that for the practice or pool, no adjustment will be made to the baseline prices. If the reverse is true, then the practice or pool had a higher proportion of expenditures for the new therapies than was the case at the non-participating practices and will qualify for an adjustment based on 80 percent of the difference in relative expenditures.
- Step 4: Calculate Adjustment and Apply to Baseline Prices
  - If the proportion of episode expenditures for novel therapies at the practice or pool exceeds the proportion for the non-participating practices, then the adjustment can be calculated as shown in the example in [Table F-1](#) below. In this example, the practice's actual episode expenditures are \$2.3 million, and the practice's expenditures associated with novel therapies are \$149,500. The corresponding proportion of expenditures associated with novel therapies for this practice is 6.5 percent ( $\$149,500 / \$2.3 \text{ million}$ ). The analogous proportion for all practices not participating in OCM is 4 percent. We first determine the practice's additional expenditures on novel therapies in the performance period beyond what is reflected in the national non-OCM experience; this is equal to the practice's actual episode expenditures (\$2.3 million) multiplied by the difference between the practice's novel therapy proportion and the national non-OCM novel therapy proportion, which is 2.5



percent (6.5 percent – 4 percent). These additional expenditures are \$57,500 (\$2.3 million \* 0.025). Next, we multiply the additional expenditures by a policy factor of 80 percent (\$57,500 \* 0.8 = \$46,000), and divide the reduced additional expenditures by the sum of the practice’s trended baseline prices (\$2.5 million in the example) to calculate the novel therapy adjustment. In this example, the adjustment is 1.84 percent (\$46,000 / \$2.5 million). We will increase each trended baseline price by this percentage to determine the benchmark price. Every episode attributed to a practice will receive the same novel therapies adjustment.

**Table F-1: Example: Application of Adjustment for Use of Novel Therapies**

Row	Item	Amount
A	Practice’s Actual Episode Expenditures	\$2,300,000
B	Practice’s Expenditures for Novel Therapies	\$149,500
C	Practice’s Proportion of Actual Episode Expenditures Due to Novel Therapies (B/A)	6.50%
D	National Proportion of Actual Episode Expenditures Due to Novel Therapies	4.00%
E	Practice’s Additional Proportion of Novel Therapy Use Beyond National non-OCM Trend (C - D)	2.5%
F	Practice’s Additional Expenditures for Novel Therapy Use Beyond National non-OCM Trend (E * A)	\$57,500
G	Practice’s Additional Expenditures for Novel Therapy Use Beyond National non-OCM Trend, Reduced by Policy Factor (F * 0.8)	\$46,000
H	Sum of Practice’s Trended Baseline Prices	\$2,500,000
I	Adjustment for Novel Therapies (G/H)	1.84%
J	Practice’s Benchmark Amount (H + H*I)	\$2,546,000

## Appendix G: Mathematical Description of the Methodology for Establishing Target Amounts

The target amount for a given practice is the sum of the target prices of all episodes attributed to the practice in the performance period. The target price for a given episode  $i$  in the performance period can be represented by:

$TP_i = BP_i * TF * ND * (1 - \text{Discount})$ , where

$TP_i$  = Target price for a given episode

$BP_i$  = Baseline price for episode  $i$  in the performance period

$TF$  = trend factor for the practice

$ND$  = Novel therapies adjustment for the practice (see Appendix F)

Discount = OCM discount (0.04 for one-sided risk, 0.0275 for original two-sided risk)

The quantity  $BP_i * TF * ND$  is referred to as the benchmark price for episode  $i$ .

The baseline price for episode  $i$  treated by a given practice in the performance period can be expressed as:

$BP_i = \exp(X_i \beta) * EA$ , where

$BP_i$  = Baseline price of the  $i^{\text{th}}$  episode

$X_i$  = Characteristics of the  $i^{\text{th}}$  episode (e.g., age, sex, cancer type, etc.)

$\beta$  = Vector of coefficients from the expenditure prediction model based on all episodes treated by all practices (participating and non-participating) in the baseline period

$EA$  = experience adjuster for the practice based on relative costliness in the baseline period

The trend factor for a given practice can be expressed by:

$TF = \frac{\sum_j \exp(X_j \gamma)}{\sum_j \exp(X_j \delta)}$ , where

$TF$  = Trend factor for the practice

$X_j$  = Characteristics of the  $j^{\text{th}}$  episode in the performance period

$\gamma$  = Vector of coefficients from the expenditure prediction model based on performance period episodes attributed to non-participating practices

$\delta$  = Vector of coefficients from the expenditure prediction model based on baseline episodes attributed to non-participating practices.

The experience adjuster for a given practice can be expressed as:

$$EA = 0.5 + 0.5 * \frac{\sum_k C_k}{\sum_k \exp(X_k \beta)}, \text{ where}$$

EA = Experience adjuster for the practice

$C_k$  = Actual expenditures for the  $k^{\text{th}}$  episode attributed to the practice in the baseline period

$X_k$  = Characteristics of the  $k^{\text{th}}$  episode attributed to the practice in the baseline period (e.g., age, sex, cancer type, etc.)

$\beta$  = Vector of coefficients from the expenditure prediction model based on all episodes treated by all practices (participating and non-participating) in the baseline period

## **Appendix H: Patient Experience of Care Measure Composites and Scoring**

This text has been removed. Please see the [OCM PBP Methodology paper effective July 2, 2017](#) for this information.

## Appendix I: OCM Prediction Model

This appendix describes the definition and form of the covariates that are incorporated into the OCM prediction model. The covariates are listed below and are described in more detail in the subsequent sections. Some covariates may be refined over the course of OCM to improve the accuracy of the prediction model.

OCM Prediction Model Covariates:

1. Age/Sex
2. Cancer type
3. Chemotherapy drugs taken/administered during the episode (breast cancer only)
4. Receipt of cancer-related surgery
5. Part D eligibility and dual eligibility for Medicare and Medicaid
6. Receipt of radiation therapy
7. Receipt of bone marrow transplant
8. Clinical trial participation
9. Comorbidities
10. History of prior chemotherapy use
11. Institutional status
12. Episode length
13. Geographic location/Hospital Referral Region

These covariates are summarized with brief descriptions in [Table I-1](#) at the end of this appendix. Covariates that serve as reference groups in the prediction model are noted.

### *Age and Sex*

Age is calculated as of the first day of the episode. Ten age/sex categories are included in the model:

FEMALE_AGE_18_64	MALE_AGE_18_64
FEMALE_AGE_65_69 (reference group)	MALE_AGE_65_69
FEMALE_AGE_70_74	MALE_AGE_70_74
FEMALE_AGE_75_79	MALE_AGE_75_79
FEMALE_AGE_80+	MALE_AGE_80+

### *Cancer Type*

There are 21 cancer types eligible for reconciliation, defined by specific diagnosis codes. The reconciliation-eligible cancer types are:

Acute Leukemia	Kidney Cancer
Anal Cancer	Liver Cancer
Bladder Cancer	Lung Cancer
Breast Cancer	Lymphoma
Chronic Leukemia	Malignant Melanoma
Central Nervous System (CNS) Tumor	Multiple Myeloma
Endocrine Tumor	Myelodysplastic Syndrome (MDS)
Female Genitourinary (GU) Cancer other than Ovarian	Ovarian Cancer

Gastro/Esophageal Cancer  
Head and Neck Cancer  
Small Intestine / Colorectal Cancer

Pancreatic Cancer  
Prostate Cancer

Specific variable names are provided in the section below on “Receipt of Cancer-Related Surgery.” Information on the specific diagnosis codes that correspond to each of the reconciliation-eligible cancer types and how a cancer type is assigned to an episode is included in the document “[OCM Cancer Type Mapping and Codes](#).”

### *Chemotherapy Drugs Taken/Administered During the Episode (Breast Cancer Only)*

Additional considerations apply to breast cancer episodes. Many breast cancer episodes represent women who are on long-term oral endocrine therapy such as tamoxifen or an aromatase inhibitor. These drug therapies are covered under Medicare Part D. Breast cancer episodes involving only Part D chemotherapy (i.e., no Part B chemotherapy) tend to be much less costly than breast cancer episodes that include at least some chemotherapy covered under Part B. Therefore, the OCM prediction model distinguishes breast cancer episodes containing only Part D chemotherapy from those containing some Part B chemotherapy.

Specific variable names for these covariates are provided in the section below on Receipt of Cancer-Related Surgery. The specifications for identifying episodes that contain only Part D chemotherapy in the Medicare claims data are as follows:

- **Step 1: For all breast cancer episodes that were triggered by Part D chemotherapy<sup>7</sup>, identify all Part B chemotherapy claims that occurred during the episode.** Part B chemotherapy for these purposes are:
  - Carrier and DME lines where all criteria in Step 1 of [Appendix A](#) are met, with the exception that the line first expense date is during the episode (inclusive of start and end dates); and,
  - Outpatient revenue centers where all criteria in Step 1 of [Appendix A](#) are met, with the exception that the revenue center date is during the episode (inclusive of start and end dates).
- **Step 2: Set the breast cancer “Part D” and “Part B” variables.**
  - If there were any Part B chemotherapy claims found meeting the above criteria, the corresponding “Part B” breast cancer variable (with or without surgery, as appropriate) is set to one and the corresponding “Part D” breast cancer variable is set to zero.
  - Otherwise, the corresponding “Part D” breast cancer variable (with or without surgery, as appropriate) is set to one and the corresponding “Part B” breast cancer variable is set to zero.

### *Receipt of Cancer-Related Surgery*

Twelve of the cancer types have cancer-related surgeries that are controlled for in the OCM prediction model if the surgeries occur during an episode. The specific surgeries are listed in the document “[OCM Prediction Model Code Lists](#),” effective July 1, 2016, and are different for each cancer type. Each of the twelve cancer types with cancer-related surgeries is represented by two variables in the model: one for episodes in which a cancer-related surgery was performed and one

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<sup>7</sup> The source of the trigger claim is assigned by the hierarchy in Step 3 of [Appendix A](#).

for episodes in which no cancer-related surgery was performed. Each cancer type that does not have a specific surgery adjustment is represented by a single variable in the model.

For breast cancer, the model also distinguishes surgery based on the Part D chemotherapy distinction described above. This results in four variables for breast cancer episodes: Only Part D chemotherapy with surgery; Only Part D chemotherapy without surgery; Part B chemotherapy with surgery; and Part B chemotherapy without surgery.

The variables representing cancer types, surgery, and Part D only chemotherapy are summarized below:

### *Breast cancer*

BREAST\_PART\_D\_ONLY\_WITH\_SURGERY  
BREAST\_PART\_D\_ONLY\_WITHOUT\_SURGERY (reference group)  
BREAST\_PART\_B\_WITH\_SURGERY  
BREAST\_PART\_B\_WITHOUT\_SURGERY

### *Other cancer types with cancer-related surgeries*

ANAL_WITH_SURGERY	ANAL_WITHOUT_SURGERY
BLADDER_WITH_SURGERY	BLADDER_WITHOUT_SURGERY
FEMALE_GU_WITH_SURGERY	FEMALE_GU_WITHOUT_SURGERY
GASTRO_WITH_SURGERY	GASTRO_WITHOUT_SURGERY
HEAD_NECK_WITH_SURGERY	HEAD_NECK_WITHOUT_SURGERY
INTESTINAL_WITH_SURGERY	INTESTINAL_WITHOUT_SURGERY
LIVER_WITH_SURGERY	LIVER_WITHOUT_SURGERY
LUNG_WITH_SURGERY	LUNG_WITHOUT_SURGERY
OVARY_WITH_SURGERY	OVARY_WITHOUT_SURGERY
PANCREAS_WITH_SURGERY	PANCREAS_WITHOUT_SURGERY
PROSTATE_WITH_SURGERY	PROSTATE_WITHOUT_SURGERY

### *Cancer Types without cancer-related surgeries*

ACUTE_LEUKEMIA	CHRONIC_LEUKEMIA	CNS
ENDOCRINE	LYMPHOMA	MDS
MELANOMA	MYELOMA	KIDNEY

The specifications for identifying cancer-related surgery in the Medicare claims data are as follows:

- **Step 1: Identify cancer-related surgery from the INPATIENT file by identifying inpatient claims for each episode where:**
  - The claim contains an ICD procedure code in the SurgeryCodes tab of the “[OCM Prediction Model Code Lists](#)” document;
  - The claim admission date falls between the first and last dates of the episode, inclusive;
  - The Medicare nonpayment reason code on the claim is blank; and,
  - The claim contains a diagnosis code that maps to the cancer type associated with the procedure code in the SurgeryCodes table OR the cancer type assigned to the episode



is the same as the cancer type associated with the procedure code in the SurgeryCodes table.

- **Step 2: Identify cancer-related surgery from the OUTPATIENT file by identifying outpatient claims for each episode where**
  - The claim contains an ICD procedure code OR a HCPCS procedure code in the SurgeryCodes tab of the [“OCM Prediction Model Code Lists”](#) document;
  - If a HCPCS code is found in the revenue centers, the revenue center is not denied (revenue center total charge amount minus revenue center non-covered charge amount > \$0);
  - The claim from date falls between the first and last dates of the episode, inclusive;
  - The claim is not denied (Medicare nonpayment reason code is blank); and,
  - The claim contains a diagnosis code that maps to the cancer type associated with the procedure code in the SurgeryCodes table OR the cancer type assigned to the episode is the same as the cancer type associated with the procedure code in the SurgeryCodes table.
  
- **Step 3: Identify cancer-related surgery from the CARRIER file by identifying carrier claims for each episode where:**
  - The claim contains a line item with a HCPCS procedure code in the SurgeryCodes tab of the [“OCM Prediction Model Code Lists”](#) document;
  - The claim from date falls between the first and last dates of the episode, inclusive;
  - The line item is not denied (line allowed charge >0); and,
  - The claim contains a header diagnosis code that maps to the cancer type associated with the procedure code in the SurgeryCodes table OR the cancer type assigned to the episode is the same as the cancer type associated with the procedure code in the SurgeryCodes table.
  
- **Step 4: Set the cancer type-specific surgery variables.**
  - If any claim is found meeting the criteria above, the corresponding cancer type variable “with surgery” is set to one and the corresponding cancer type variable “without surgery” is set to zero.
  - Otherwise, the corresponding cancer type variable “without surgery” is set to one and the corresponding cancer type variable “with surgery” is set to zero.

#### ***Part D Eligibility and Dual Eligibility for Medicare and Medicaid***

Dual eligibility refers to beneficiaries who are enrolled in both Medicare and Medicaid. Full dual eligibility refers to eligibility for full Medicaid benefits; these beneficiaries are normally entitled to Part D enrollment with a low-income subsidy (LIS). Beneficiaries with partial Medicaid benefits and other low-income beneficiaries without Medicaid may also qualify for Part D and the LIS. The following set of variables defines eligibility for full Medicaid benefits and Part D (measured at the beginning of the episode) in the OCM prediction model:

FULL\_DUAL – Has full Medicaid benefits (including Part D and LIS)

PART\_D\_LIS – Does not have full Medicaid benefits but does have Part D with LIS

PART\_D\_NO\_LIS – Has Part D enrollment but no LIS  
NO\_PART\_D – Has no Part D enrollment (reference group)

These categories are mutually exclusive and exhaustive.

### ***Receipt of Radiation Therapy***

A single variable indicates whether radiation therapy was provided during the episode or not. The ICD and HCPCS procedure codes used to identify radiation therapy are contained in the document “[OCM Prediction Model Code Lists](#),” effective July 1, 2016. The codes are restricted to those indicating the delivery of radiation therapy, and do not include planning or preparation for radiation therapy. If any claim during an episode had one of the procedure codes listed for radiation delivery, the RADIATION variable was assigned a value of 1 (otherwise 0).

The specifications for identifying radiation therapy in the Medicare claims data are as follows:

- **Step 1: Identify radiation from the INPATIENT file by identifying inpatient claims for each episode where:**
  - The claim contains at least one of the ICD or HCPCS procedure codes in the Radiation tab of the “[OCM Prediction Model Code Lists](#)” document;
  - The claim admission date falls between the first and last dates of the episode, inclusive; and,
  - The claim is not denied (Medicare nonpayment reason code is blank).
- **Step 2: Identify radiation from the OUTPATIENT files by identifying outpatient claims for each episode where:**
  - The claim contains a HCPCS or ICD procedure code in the Radiation tab of the “[OCM Prediction Model Code Lists](#)” document;
  - If a HCPCS code is found in the revenue centers, the revenue center is not denied (revenue center total charge amount minus revenue center non-covered charge amount > \$0);
  - The claim from date falls between the first and last dates of the episode, inclusive; and,
  - The claim is not denied (Medicare nonpayment reason code is blank).
- **Step 3: Identify radiation from the PHYSICIAN files by identifying physician claims for each episode where:**
  - The claim contains a line item with a HCPCS code in the Radiation tab of the “[OCM Prediction Model Code Lists](#)” document;
  - The claim from date falls between the first and last dates of the episode, inclusive; and
  - The line item is not denied (line allowed charge > 0).
- **Step 4: If a claim is found meeting the criteria above, RADIATION = 1, otherwise, RADIATION = 0.**

### ***Receipt of Bone Marrow Transplant***

Two bone marrow transplant (BMT) variables are calculated: one for allogeneic BMTs (BMT\_ALLOGENEIC) and one for autologous BMTs (BMT\_AUTOLOGOUS). BMTs will be counted for four cancer types: Acute Leukemia, Lymphoma, Multiple Myeloma, and MDS. If both types of BMT

appear in a given episode, the allogeneic BMT will take precedence. BMT procedures are identified by the codes included in the document “[OCM Prediction Model Code Lists](#),” effective July 1, 2016. The claim with the BMT procedure code or DRG must contain a diagnosis code for the same cancer type as the episode.

The specifications for identifying bone marrow transplants in the Medicare claims data are as follows:

- **Step 1: Identify BMTs from the INPATIENT file by identifying inpatient claims for each episode where:**
  - The claim contains a DRG or ICD code listed in the BMT tab of the “[OCM Prediction Model Code Lists](#)” document (the list identifies which codes are autologous and which are allogeneic);
  - The claim admission date falls between the first and last dates as of the episode, inclusive;
  - The Medicare nonpayment reason code on the claim is blank; and,
  - The episode’s cancer type is Acute Leukemia, Lymphoma, Multiple Myeloma, or MDS.
- **Step 2: Identify BMTs from the OUTPATIENT files by identifying outpatient claims for each episode where:**
  - The claim contains a HCPCS or ICD procedure code in the BMT tab of the “[OCM Prediction Model Code Lists](#)” document;
  - If a HCPCS code is found in the revenue centers, the revenue center is not denied (revenue center total charge amount minus revenue center non-covered charge amount > \$0);
  - The claim from date falls between the first and last dates of the episode, inclusive;
  - The claim is not denied (Medicare nonpayment reason code is blank); and
  - The episode’s cancer type is Acute Leukemia, Lymphoma, Multiple Myeloma, or MDS.
- **Step 3: Flag the appropriate BMT variable.**
  - If a claim meeting the criteria above for an allogeneic BMT is found, BMT\_ALLOGENEIC = 1, otherwise BMT\_ALLOGENEIC = 0.
  - If a claim meeting the criteria above for an autologous BMT is found AND no claims meeting the criteria for an allogeneic BMT were found, BMT\_AUTOLOGOUS = 1, otherwise BMT\_AUTOLOGOUS = 0.

### *Clinical Trial Participation*

A single variable (CLINICAL\_TRIAL) indicates whether the beneficiary participated in a clinical trial during the episode. An ICD9 diagnosis code of V70.7 or an ICD10 diagnosis code of Z00.6 must appear on a claim that also contains a cancer diagnosis and has a service date within the 6-month episode.

The specifications for identifying clinical trial participation in the Medicare claims data are as follows:

- **Step 1: Identify clinical trials from the INPATIENT file by identifying inpatient claims for each episode where:**

- The claim contains an ICD 9 diagnosis code of V70.7 or an ICD 10 diagnosis code of Z00.6;
  - The claim admission date falls between the first and last dates of the episode, inclusive;
  - The claim is not denied (Medicare nonpayment reason code is blank); and,
  - The claim contains a qualifying cancer diagnosis.
- **Step 2: Identify clinical trials from the OUTPATIENT file by identifying outpatient claims for each episode where:**
    - The claim contains an ICD 9 diagnosis code of V70.7 or an ICD 10 diagnosis code of Z00.6;
    - The claim from date falls between the first and last dates of the episode, inclusive;
    - The claim is not denied (Medicare nonpayment reason code is blank); and,
    - The claim contains a qualifying cancer diagnosis.
  - **Step 3: Identify clinical trials from the CARRIER file by identifying physician claims for each episode where:**
    - The claim contains an ICD 9 diagnosis code of V70.7 or an ICD 10 diagnosis code of Z00.6 in the line item diagnoses or in the header diagnoses;
    - The claim from date falls between the first and last dates of the episode, inclusive;
    - The claim is not denied (carrier claim payment denial code is one of: 1-9, A, B); and,
    - The claim contains a qualifying cancer diagnosis in the line or header diagnoses.
  - **Step 4: If any claim is found meeting the criteria above, CLINICAL\_TRIAL = 1, otherwise CLINICAL\_TRIAL = 0.**

### *Comorbidities*

Comorbidities are measured through a subset of the CMS Hierarchical Condition Category (HCC) flags. These flags are created by CMS on a calendar year basis and indicate treatment for 70 different conditions in the prior calendar year. The number of HCC flags that are “turned on” in the calendar year in which the episode started is incorporated in the model because episode expenditures increase with higher numbers of pre-existing comorbidities. Condition flags related to cancer are not counted in the OCM prediction model because all beneficiaries in OCM episodes have cancer. Also, flags associated with opportunistic infections, protein-calorie malnutrition, severe hematological disorders, disorders of immunity, and coagulation defects and other specified hematological disorders are not counted because these conditions are often preventable or are a recognized aspect of the specified cancer and are therefore already incorporated into baseline episode expenditures. The HCC-related variables are as follows:

- HCC\_0 – No HCC flags turned on (reference group)
- HCC\_1 – One HCC flag turned on
- HCC\_2 – Two HCC flags turned on
- HCC\_3 – Three HCC flags turned on
- HCC4\_5 – Four or five HCC flags turned on
- HCC6\_OR\_MORE – Six or more HCC flags turned on
- NEW\_ENROLLEE – No HCC flags because the enrollee was new to Medicare

The HCC categories used in the OCM prediction model are listed in the document “[OCM Prediction Model Code Lists](#),” effective July 1, 2016, which is on the CMS OCM website. Note that some of the categories are hierarchical, consistent with the hierarchies established for Medicare Advantage payment policy. If flags for a more severe and a less severe version of a specific condition are present, then only the flag associated with the more severe version of the condition is counted.

### *History of Prior Chemotherapy Use*

Episodes where the beneficiary has a history of chemotherapy use often tend to be less expensive than those without such a history. The episode start date minus the date of the most recent chemotherapy claim before the episode start date is referred to as the “clean period.” There are three variables related to length of the clean period:

CLEAN\_1\_61 – Clean period between 1 and 61 days

CLEAN\_62\_730 – Clean period between 62 and 730 days

CLEAN\_731+ – Clean period over 730 days or no prior chemo claims (reference group)

Beneficiaries with recent Medicare enrollment have little or no Medicare claims history and will be categorized in the CLEAN\_731+ group if they have no observable prior chemotherapy use. These beneficiaries will be distinguished in the model by the NEW\_ENROLLEE variable described in the “Comorbidities” section above.

The specifications for identifying prior chemotherapy use in the Medicare claims data are as follows:

- **Step 1: Identify all possible qualifying chemotherapy claims in the two-year period prior to the episode start date.**
  - Qualifying chemotherapy claims meet the same criteria in Step 1 of Appendix A.
- **Step 2: Calculate the clean period as the difference between the chemotherapy claim date and the episode beginning date.**
  - For Physician and DME claims the chemotherapy claim date is the line first expense date.
  - For Outpatient claims the chemotherapy claim date is the revenue center date.
  - For PDE claims the chemotherapy claim date is the fill date.
- **Step 3: Set the clean period flag according to the clean period calculated in Step 2.**
  - Clean\_1\_61 = 1 if  $0 < \text{clean period} < 62$ ; 0 otherwise
  - Clean\_62\_730 = 1 if  $61 < \text{clean period} < 731$ ; 0 otherwise
  - Clean\_731+ = 1 if clean period  $> 730$  OR there were no chemotherapy claims before the episode began; 0 otherwise

### *Institutional Status*

The variable INSTITUTIONAL\_STATUS measures whether the beneficiary had been institutionalized in a long-term care facility for more than 90 days as of the month in which the episode started. This variable is obtained from CMS’ HCC files, which contain monthly indicators for residence in a long-term care facility. CMS derives these monthly indicators from the Minimum Data Set (MDS), which contains assessment information collected from skilled nursing facilities.

### *Episode Length*

Episodes have a fixed length of 6 calendar months, which results in a variable number of days (181 – 184 days) depending on which calendar months are included in the episode. The variable EP\_183\_184 represents episodes with a length of 183 or 184 days compared to those with a length of 181 or 182 days.

### *Geographic Location/Hospital Referral Region*

A geographic adjustment will be made to distinguish episodes occurring in high- and low-cost areas. The geographic unit will be hospital referral region (HRR). There are 307 such areas defined by the Dartmouth Institute for Health Policy and Clinical Practice to reflect regional healthcare markets for tertiary hospital care.<sup>8</sup> Beneficiary zip codes were mapped to the HRRs for purposes of assigning a specific HRR to each episode. The average baseline episode cost in each HRR was divided by the average baseline cost of all episodes to obtain a relative episode cost for each HRR. The geographic adjustment was then operationalized as:

$$\text{HRR\_RELATIVE\_COST} = [(\text{Average episode cost for the HRR}/\text{Average episode cost across all HRRs}) - 1] * 100.$$

By subtracting one from the ratio of average costs the variable is anchored at zero. Episodes in HRRs with higher than average costs will see an increase in predicted costs and episodes in HRRs with lower than average costs will see a decrease in predicted costs. The variable captures the percentage difference in average episode costs between a given HRR and all HRRs. This variable is continuous.

### *Prediction Model Variable Names*

The table below lists all of the variables used in the OCM prediction model and their descriptions. All variables take values of either zero or one except for the HRR\_RELATIVE\_COST, which is a continuous variable. Model coefficients and other regression output are summarized in the document “[OCM Prediction Model Code Lists](#),” effective July 1, 2016, which is on the CMS OCM website.

**Table I-1: OCM Prediction Model Variables**

Variable Name	Description (if value=1)
FEMALE_AGE_18_64	Female, age 18 to 64
FEMALE_AGE_65_69	Female, age 65 to 69 (reference group)
FEMALE_AGE_70_74	Female, age 70 to 74
FEMALE_AGE_75_79	Female, age 75 to 79
FEMALE_AGE_80+	Female, age 80 or greater
MALE_AGE_18_64	Male, age 18 to 64
MALE_AGE_65_69	Male, age 65 to 69
MALE_AGE_70_74	Male, age 70 to 74
MALE_AGE_75_79	Male, age 75 to 79
MALE_AGE_80+	Male, age 80 or greater
BREAST_PART_D_ONLY_WITH_SURGERY	Breast cancer, only part D chemotherapy drugs, with surgery

<sup>8</sup> Dartmouth Institute for Health Policy and Clinical Practice. The Dartmouth Atlas of Health Care. Available at <http://www.dartmouthatlas.org/>.



## OCM Performance-Based Payment Methodology

Variable Name	Description (if value=1)
BREAST_PART_D_ONLY_WITHOUT_SURGERY	Breast cancer, only part D chemotherapy drugs, without surgery (reference group)
BREAST_PART_B_WITH_SURGERY	Breast cancer, at least some Part B chemotherapy drugs, with surgery
BREAST_PART_B_WITHOUT_SURGERY	Breast cancer, at least some Part B chemotherapy drugs, without surgery
BLADDER_WITH_SURGERY	Bladder cancer, with surgery
BLADDER_WITHOUT_SURGERY	Bladder cancer, without surgery
PROSTATE_WITH_SURGERY	Prostate cancer, with surgery
PROSTATE_WITHOUT_SURGERY	Prostate cancer, without surgery
ANAL_WITH_SURGERY	Anal cancer, with surgery
ANAL_WITHOUT_SURGERY	Anal cancer, without surgery
FEMALE_GU_WITH_SURGERY	Female GU cancer other than ovary, with surgery
FEMALE_GU_WITHOUT_SURGERY	Female GU cancer other than ovary, without surgery
GASTRO_WITH_SURGERY	Gastro/Esophageal cancer, with surgery
GASTRO_WITHOUT_SURGERY	Gastro/Esophageal cancer, without surgery
HEAD_NECK_WITH_SURGERY	Head and neck cancer, with surgery
HEAD_NECK_WITHOUT_SURGERY	Head and neck cancer, without surgery
INTESTINAL_WITH_SURGERY	Small Intestine / Colorectal cancer, with surgery
INTESTINAL_WITHOUT_SURGERY	Small Intestine / Colorectal cancer, without surgery
LIVER_WITH_SURGERY	Liver cancer, with surgery
LIVER_WITHOUT_SURGERY	Liver cancer, without surgery
LUNG_WITH_SURGERY	Lung cancer, with surgery
LUNG_WITHOUT_SURGERY	Lung cancer, without surgery
OVARY_WITH_SURGERY	Ovarian cancer, with surgery
OVARY_WITHOUT_SURGERY	Ovarian cancer, without surgery
PANCREAS_WITH_SURGERY	Pancreatic cancer, with surgery
PANCREAS_WITHOUT_SURGERY	Pancreatic cancer, without surgery
ACUTE_LEUKEMIA	Acute leukemia
CHRONIC_LEUKEMIA	Chronic leukemia
CNS	CNS tumor
ENDOCRINE	Endocrine tumor
KIDNEY	Kidney cancer
LYMPHOMA	Lymphoma
MDS	Myelodysplastic Syndrome
MELANOMA	Malignant melanoma
MYELOMA	Multiple myeloma
FULL_DUAL	Enrolled in Part D, full dual, LIS
PART_D_LIS	Enrolled in Part D, partial dual or LIS applicant, LIS
PART_D_NO_LIS	Enrolled in Part D, no LIS
NO_PART_D	Not enrolled in Part D (reference group)
RADIATION	Received radiation therapy during episode
BMT_ALLOGENEIC	Received allogeneic BMT during episode

## OCM Performance-Based Payment Methodology

Variable Name	Description (if value=1)
BMT_AUTOLOGOUS	Received autologous BMT during episode
CLINICAL_TRIAL	Participated in a clinical trial for cancer during episode
HCC_0	No HCC flags turned on (reference group)
HCC_1	One HCC flag turned on
HCC_2	Two HCC flags turned on
HCC_3	Three HCC flags turned on
HCC4_5	Four or five HCC flags turned on
HCC6_OR_MORE	Six or more HCC flags turned on
NEW_ENROLLEE	New Medicare enrollee (no HCC flags turned on)
CLEAN_1_61	Clean period between 1 and 61 days
CLEAN_62_730	Clean period between 62 and 730 days
CLEAN_731+	Clean period over 730 days or no prior chemo claims (reference group)
INSTITUTIONAL_STATUS	Was institutionalized for more than 90 days as of the month the episode began
EP_183_184	Episode length 183 - 184 days
HRR_RELATIVE_COST	Episode expenditures in beneficiary's HRR relative to average episode expenditures in all HRRs



## **Appendix J: Calculation of Adjustment for Overlapping ACO and OCM Payments**

The following steps are taken in the calculation of the ACO overlap adjustment:

1. Identify patients who have reconciliation-eligible episodes attributed to an OCM practice and who were also aligned with an ACO during the episode.
2. Identify the subset of episodes from Step 1 whose attributed practice's TIN was also an ACO participant for any part of the OCM performance period.
3. Determine the percentage of each episode that overlaps with the ACO performance year by dividing the number of days of overlap by the length of the episode.
4. Calculate the prorated benchmark price for each episode by multiplying the overlap percentage calculated in Step 3 by the episode's benchmark price.
5. Calculate the prorated benchmark amount for each practice or pool by summing the prorated benchmark prices calculated in Step 4.
6. Determine whether the OCM participant's ACO received a shared savings payment in the ACO performance year overlapping with the current OCM performance period AND if the OCM participant has a PBP calculated for the current performance period.
  - o If either is not true, there is no ACO overlap adjustment.
  - o If both are true, go to Step 7.
7. Calculate the overlapping discount amount by multiplying the prorated benchmark amount by the OCM discount (4% in one-sided risk).
8. Multiply the overlapping discount amount by the ACO's sharing percentage. The result is the Adjustment for Overlapping Payments.

Note that some OCM performance periods overlap with one ACO performance year (i.e., a calendar year) and some OCM performance periods overlap with two ACO performance years. In the case where an OCM performance period overlaps with two ACO performance years, two separate calculations are performed, one for each ACO performance year, and the resulting adjustments are summed before subtracting from the OCM PBP.

See below for an example calculation. This example assumes the OCM practice is in the one-sided risk arrangement, with a 4% OCM discount.

**OCM-999**

<b>Total Episodes</b>		<b>1,200</b>
Benchmark Amount		\$40,000,000
Target Amount	Benchmark * (1 - 0.04)	\$38,400,000
Actual Expenditures		\$38,000,000
Savings over Benchmark	Benchmark Amount - Actual Expenditures	\$2,000,000
Savings over Target	Target Amount - Actual Expenditures	\$400,000
Percentage Savings over Benchmark	Savings over Benchmark / Benchmark Amount	5%
Percentage Savings over Target	Savings over Target / Target Amount	1%

**GoodHealth ACO**

<b>Total ACO Beneficiaries</b>		<b>67,250</b>
ACO Benchmark		\$690,000,000
ACO Actual Expenditures		\$683,100,000
ACO Savings	ACO Benchmark - ACO Actual Expenditures	\$6,900,000
ACO Percentage Savings	ACO Savings / ACO Benchmark	1%
ACO Sharing Rate		70%
ACO Shared Savings Payment	ACO Sharing Rate * ACO Savings	\$4,830,000

Prorated OCM Discount Amount is savings that is a subset of the ACO's savings.

**Overlap between OCM-999 and GoodHealth ACO**

<b>Overlapping Episodes</b>		<b>120</b>
Prorated Benchmark Amount (Steps 1-2)		\$4,000,000
Prorated OCM Discount Amount (Steps 3-5, 7)	4% * Prorated Benchmark Amount	\$160,000
Adjustment for Overlapping ACO Shared Savings Payments* (Step 8)	ACO Sharing Rate * Prorated OCM Discount	\$112,000

\*The adjustment for overlapping ACO shared savings payments is subtracted from the OCM practice's PBP.

Because OCM-999 saved over its target, it also saved the prorated OCM discount amount for the overlapping episodes, \$160,000. This is \$160,000 in OCM savings that will not be paid to the OCM practice as part of its OCM PBP, because in OCM CMS keeps the OCM discount amount. With no adjustment, GoodHealth ACO will have received a shared savings payment that includes a portion of the OCM savings (70% of \$160,000, or, \$112,000) that ought to have been retained by CMS.