Clinical Episode Reconciliation Specifications

Model Years 1 and 2

Center for Medicare & Medicaid Services (CMS)

Center for Medicare & Medicaid Innovation (Innovation Center)

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

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1 INPUTS

Table 1: Clinical Episode Reconciliation Inputs

#	Name	Description
1	BPCI Advanced National and Participant Performance Period Clinical Episodes	The national and Participant set of Clinical Episodes and associated spending amounts in the Performance Period.
2	Final Target Prices	Prices finalized at the time of reconciliation by replacing the preliminary Patient Case Mix Adjustment (PCMA) with the realized value in the Performance Period.
3	Quality Measures Data	Individual Quality Measure scores used to calculate Composite Quality Score (CQS) for each Episode Initiator.
4	Master Data Management (MDM)	These data are used as an input to identify beneficiaries aligned to Accountable Care Organizations (ACOs) to be excluded from BPCI Advanced.

2 OUTPUTS

Table 2: Clinical Episode Reconciliation Outputs

#	Name	Description
1	Net Payment Reconciliation Amount (NPRA)	The amount paid to the Participant by CMS after the Reconciliation.
2	Repayment Amount	The amount paid by the Participant to CMS after the Reconciliation.
3	Excess Spending Amount	The amount paid by the Participant to CMS after Post-Episode Spending Calculations.

3 CLINICAL EPISODE RECONCILIATION OVERVIEW

The following document describes the specifications used for semi-annual Reconciliation calculations and Post-Episode Spending Calculations for the Bundled Payments for Care Improvement Advanced (BPCI Advanced) model. This document is based on the methodology and outputs from the previous steps of the model that are discussed in the Clinical Episode construction[1] and Target Price construction[2] specifications documents. To refer to specific steps from the Clinical Episode construction and Target Price construction specifications, this document uses **CE-Step** and **TP-Step**, respectively.

As part of the Reconciliation process, for each Participant (both Convener Participants and Non-Convener Participants) CMS compares the Medicare Fee-For-Service (Medicare FFS) allowed amounts from the Episode Initiator's Clinical Episodes against final Target Prices and identifies payments above or below the final Target Price by the defined amount. After applying payment adjustments and capping amounts to limit risk exposure, defined amounts are represented by either the *Net Payment Reconciliation Amount* (*NPRA)* (the amount paid to the Participant by CMS) or the *Repayment Amount* (the amount paid by the Participant to CMS). In addition to calculating Reconciliation amounts, CMS performs true-up calculations to update initial Reconciliation amounts and prior true-ups using claims processed as of a later date, and quality adjustments, , where applicable. Finally, for each Participant, CMS performs a Post-Episode Spending Calculation that determines whether aggregate Medicare FFS spending on items and services furnished to BPCI Advanced Beneficiaries during the Post-Episode Spending Monitoring Period exceeds a calculated threshold in order to prevent excess spending in the days following the Clinical Episode period.

Figure 1 contains the timeline for the sequential stages of the Reconciliation process for Performance Periods 1 and 2.[3] For example, for Participants with Clinical Episodes ending between October 1, 2018 and June 30, 2019 (Performance Period 1), CMS will conduct the initial Reconciliation in Fall 2019, and first and second true-up calculations in Spring 2020 and Fall 2020, respectively. Additionally, Model Year 2 Clinical Episodes that end in CY2020 will be reconciled and "trued-up" on the same schedule as the first Reconciliation in Model Year 3 (Performance Period 3). Target Price assignment is determined using Anchor Stay discharge or Anchor Procedure completion date, and Performance Period is determined using Clinical Episode end date. Quality adjustments based on the Composite Quality Score (CQS) will be first applied during the second true-up calculations for Performance Period 1 and the first true-up calculations for Performance Period 2 (Fall 2020). Post-Episode Spending Calculations will

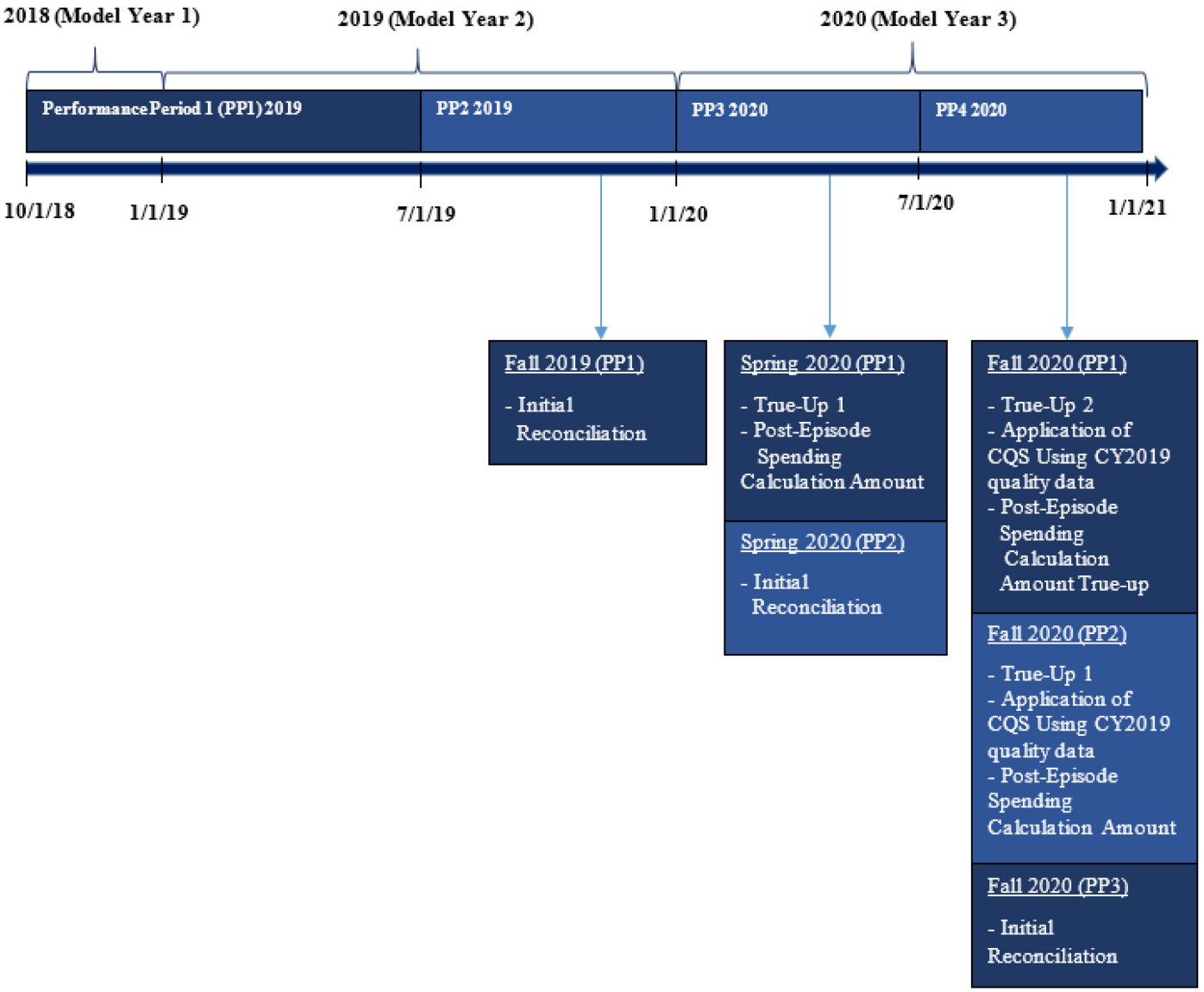
[1] *"Clinical Episode Construction Specifications Model Years 1 and 2"*: https://innovation.cms.gov/Files/x/bpciadvanced-episodecreationspecs-yr1-2.pdf

[2] "*BPCI-Advanced-Target-Price-Specifications-Model-Years-1-2":* https://innovation.cms.gov/Files/x/bpciadvanced-targetprice-my1-2.pdf

[3] Refer to Table 3 for date ranges of each Performance Period in Model Years 1 and 2

initially occur during the first true-up calculation of each Performance Period and will be recalculated during the second true-up.

Figure 1. Reconciliation Timeline



The next 8 sections contain detailed descriptions of the sequential stages of the reconciliation process.

- **Section 4** provides the methodology for calculating Performance Period Clinical Episode payments in real dollars.
- **Section 5** discusses the methodology for calculating final Target Prices using the updated PCMA and updated Relative Case Mix.
- **Section 6** provides the methodology for calculating Total Performance Period Target Amounts for each Episode Initiator.
- **Section 7** describes quality measures and provides detailed methodology for the calculation and implementation of CQS.
- **Section 8** describes the step-by-step calculation of Reconciliation amounts.
- **Section 9** walks through semi-annual true-up calculations.
- **Section 10** introduces BPCI Advanced Post-Episode Spending Calculations.

4 CALCULATE PERFORMANCE PERIOD CLINICAL EPISODE PAYMENTS

This section describes steps to calculate Performance Period Clinical Episode payments for each Episode Initiator and Clinical Episode category, using the Performance Period Clinical Episodes with the date ranges detailed in Table 3.

Table 3: Model Years 1 and 2 Clinical Episode Date Ranges

Performance Periods	Date Range
Performance Period 1	Clinical Episodes with a Clinical Episode end date between 10/1/18 and 6/30/19[4,5], and start dates on or after 10/1/18[6].
Performance Period 2	Clincial Episodes with a Clincial Episode end date between 7/1/19 and 12/31/19.[7]
Performance Period 3	Clinical Episodes with a Clinical Episode end date on or after 1/1/20, but an Anchor Stay discharge date or Anchor Procedure completion date on or before 12/31/19.

[4] When a Participant terminates participation in the Model, the Participant will be accountable for Clinical Episodes if the Anchor Stay/Anchor Procedure discharge/completion date is prior to the effective date of the termination. Performance Period attribution will be based on Clinical Episode end date.
[5] Participants will not be attributed Clinical Episodes that begin before the start of the Model on 10/1/18.
[6] Assignment to a Model Year is typically based on Anchor Stay discharge date or Anchor Procedure completion date. However, in Model Year 1 and 2, there is an additional restriction that the Clinical Episode must start on or after the start of Model Year 1.
[7] Refer to footnote 4.

- **Step 1. Aggregate Performance Period Clinical Episode payments at the Episode Initiator-Clinical Episode category level**: Use the BPCI Advanced Participant Clinical Episodes ending in the applicable Performance Period to calculate each Episode Initiator's total spending for a particular Clinical Episode category. Specifically, for each Episode Initiator, sum the standardized allowed amounts across all the Clinical Episodes in that Clinical Episode category. If the Episode Initiator is an acute care hospital (ACH), aggregate spending for all Clinical Episodes initiated at and attributed to the ACH. If the Episode Initiator is a Physician Group Practice (PGP), aggregate spending for all attributed Clinical Episodes based upon initiating claims billed under the PGP's TIN, as described in the Clinical Episode Construction Specifications.[8]
- **Step 2. Convert Performance Period Clinical Episode payments to real dollars to obtain final Performance Period Clinical Episode payments:** Convert the Performance Period Clinical Episode payments to real dollars using the following steps:
    - **Step 2a.** Create a ratio of real dollars to standardized dollars by dividing the sum of real Clinical Episode payments by the sum of standardized Clinical Episode payments in the Performance Period for each Episode Initiator and Clinical Episode category.
    - **Step 2b.** Multiply the Performance Period Clinical Episode payments **(Step 1)** by the ratio of real dollars to standardized dollars calculated in **Step 2a**.

8 $Performance\ Period\ Clinical\ Episode\ Payments_{m,ce,t}=\sum_{h\epsilon H}\sum_{i\epsilon T(m,h,ce,t)}Y_{i,m,t}$

where:
i is the specific Clinical Episode
h is the ACH at which the Clinical Episode is initiated
t is the applicable Performance Period
m is the Episode Initiator which can be either an ACH or PGP
ce is the specific Clinical Episode category
$Y_{i,m,t}$ is the standardized Clinical Episode allowed amount
The value $i\epsilon T(m,h,ce,t)$ refers to a Clinical Episode *i* from the set of Clinical Episodes initiated by an Episode Initiator *m* at ACH *h* at time *t*. $T(m,h,\text{ce},t)$ will be empty for all $h\epsilon H$ at which the Episode Initiator is not assigned a Clinical Episode.

5 CALCULATE FINAL TARGET PRICE

This section explains how to calculate the final Target Price. The final Target Price methodology updates the preliminary Target Price at the time of Reconciliation by using realized Performance Period data to calculate the updated PCMA and the updated Relative Case Mix. This practice ensures that final Target Prices accurately reflect the case mix of the patients treated during a given Performance Period. The Standardized Baseline Spending (SBS) and Peer Adjusted Trend (PAT) Factor remain constant from the preliminary Target Price calculation.[9] Thus, for ACHs, the updated Hospital Benchmark Price (HBP) is calculated by updating the PCMA term, using the following equation:

$$HBP_{h,u} = SBS_h * PCMA_{u,h} * PAT\ Factor_h \text{ where}$$

h is the ACH to which the Clinical Episode is attributed, and

u denotes that the term is the updated version.

For PGP Episode Initiators, the updated PGP-ACH Benchmark Price is calculated by updating the Relative Case Mix term so that it compares the Performance Period case mix of the PGP's Clinical Episodes at the ACH, to the baseline period case-mix of the ACH's episodes. The final PGP-ACH Target Price is calculated using the following equation:

$$PGP\ ACH\ Benchmark\ Price_{p,h,u} = HBP_{h,i} * PGP\ Offset_{p,h} * Relative\ Case\ Mix_{p,h,u} \text{ where:}$$

p is the PGP to which the Clinical Episode is attributed;

h is the ACH at which the Clinical Episode is initiated;

i denotes that the term is the preliminary version; and

u denotes that the term has been updated to reflect realized Performance Period spending

The formulas above use components of preliminary Target Prices that are updated during each Model Year to account for the most recently available Medicare payment rates. Specifically, the preliminary Target Prices for Model Years 1 and 2 will be updated three times to align with updates to Medicare FFS payment rates. The preliminary Target Prices distributed in May 2018 were based upon the FY 2018 and CY 2018 Final Rules. The preliminary Target Prices distributed in October 2018 and January 2019 reflect FY 2019 and CY 2019 payment rate updates, respectively. Finally, the preliminary Target Prices distributed in November 2019 reflect the FY 2020 payment rates, which will be applied to Clinical Episodes with an Anchor Stay discharge or Anchor Procedure completion date in 2019Q4. The goal of these updates is to maintain an accurate benchmark against which the Model compares Aggregate FFS Payments

[9] Though the Medicare payment rate updates will impact the SBS and PAT factor terms, any resulting changes to the Target Price will be delivered to Participants prospectively and therefore will be a part of the Preliminary Target Price.

(AFP). While the group of baseline period Clinical Episodes remains the same, the revised payment rates are used to inflate the spending amounts of these baseline period Clinical Episodes to current Medicare payment rates. Risk adjustment is rerun under specifications identical to the initial preliminary Target Prices. This results in updated coefficients and, ultimately, updated preliminary Target Prices. The changes to pricing only reflect changes to the relevant prices finalized in the Final Rules. Since, on average, rates increase, it is anticipated that these updates will on average increase preliminary Target Prices. These new preliminary Target Prices are provided to Participants as soon as feasible following publication of the applicable Final Rules in the Federal Register. Refer to Table 4 below for dates and payment rate periods pertaining to the Target Price updates.

Table 4: Preliminary Target Price Updates

Preliminary Target Price Release Date	Preliminary Target Price Effective Date	Applicable FFS Payment Rate Period[10]
May 2018	N/A	FY 2018 and CY 2018[11]
October 2018	October 1, 2018	FY 2019
January 2019	January 1, 2019	CY 2019
November 2019	October 1, 2019	FY 2020

These preliminary Target Prices, adjusted for the new Medicare payment rates, will be converted to final Target Prices using the steps described below.

- **Step 3. Determine updated HBP:** To ensure that Target Prices accurately reflect the case mix of the patients treated during a given Performance Period, update the preliminary HBP (**TP-Step 12**) to take into account the realized case mix of the Performance Period that has now ended for each ACH and Clinical Episode category. This requires recalculating the Clinical Episode level patient case mix adjustment amount that comes from the predicted values of the first stage of the risk adjustment model and adjusting the PCMA term and the HBP to account for the updates. This step does not involve rerunning the risk adjustment models.
    - **Step 3a.** For an ACH, apply the beneficiary-level coefficient values from **TP-Step 1** to the Clinical Episodes in the Performance Period. Specifically, rerun **TP-Step 3** using the Performance Period Clinical Episodes to calculate the Clinical Episode-level patient case mix adjustment amount.
    - **Step 3b.** Rerun **TP-Step 10** to calculate the updated PCMA for the ACH and Clinical Episode category by taking the average Clinical Episode-level patient case mix

[10] Fiscal year payment rate updates will incorporate changes in the Inpatient Prospective Payment System (IPPS), Inpatient Rehabilitation Facility (IRF) and Skilled Nursing Facility (SNF) Final Rules. Calendar year update will incorporate changes in the Outpatient Prospective Payment System (OPPS), Physician Fee Schedule (PFS) and Home Health Agency (HHA) Final Rules. The calendar year updates will also incorporate Medicare Economic Index (MEI).

[11] Initial preliminary Target Prices are based on the 2018 payment rates due to availability at the time of workbook distribution.

adjustment amount **(Step 3a)** and dividing by the Dollar Amount (**TP-Step 7**). The Dollar Amount is a normalizing factor that is used interpret the SBS in dollars and the PCMA terms as ratios relative to national baseline case mix. It is calculated by taking the average predicted spending for all Clinical Episodes in the national set of Clinical Episodes for a Clinical Episode category, and it remains unchanged from preliminary Target Price construction.

- **Step 3c.** Rerun **TP-Step 12** by multiplying the three components that make up the updated HBP: the SBS (**TP-Step 9**), the updated PCMA **(Step 3b)** and the PAT factor (**TP-Step 11**) for each ACH and Clinical Episode category.

- **Step 4. Determine updated PGP-ACH Benchmark Price:** Calculate the updated PGP-ACH Benchmark Price for each Clinical Episode category by taking into account the PGP's realized case mix at the ACH during the Performance Period that has now ended.
  - **Step 4a.** Rerun **TP-Step 15** to calculate the updated Relative Case Mix using Performance Period Clinical Episodes. Calculate the updated PCMA at the PGP-ACH level by taking the average Clinical Episode-level patient case mix adjustment amount **(Step 3a)** for each PGP-ACH[12] combination and dividing by the Dollar Amount (**TP-Step 7**). Calculate updated Relative Case Mix as the ratio of the final PCMA for each PGP-ACH pair over the preliminary PCMA for the applicable ACH (TP-**Step 10**).
  - **Step 4b.** Calculate the updated PGP-ACH Benchmark Price as the product of the preliminary HBP (**Step 3c**), the PGP Offset (**TP-Step 14**), and the updated Relative Case Mix (**Step 4a**). Note that for PGPs that did not have at least 41 Clinical Episodes for a specific Clinical Episode category in the baseline period, the PGP Offset is 1.

- **Step 5. Determine final Target Prices:** Calculate the final Target Prices by applying the CMS Discount Factor and converting the price from standardized to real dollars.
  - **Step 5a.** Apply a 3% CMS Discount Factor to updated HBPs and updated PGP-ACH Benchmark Prices to calculate the updated Target Prices in standardized dollars for ACHs and PGPs, respectively.
  - **Step 5b.** Calculate final Target Prices by converting the updated Target Prices **(Step 5a)** into real dollars. Multiply the updated Target Prices by a ratio of real dollars to standardized dollars **(Step 2b)** for each Episode Initiator and Clinical Episode category.

[12] Limited to ACHs at which the PGP initiates Clinical Episodes that are assigned to it. Only those ACHs which have at least 41 Clinical Episodes for that Clinical Episode category in the baseline period are considered.

6 CALCULATE TOTAL PERFORMANCE PERIOD TARGET AMOUNT

This section describes how to calculate the Total Performance Period Target Amount based upon the final Target Prices for each of the Episode Initiator's Clinical Episode categories. For ACHs and PGPs practicing at a single ACH, the Total Performance Period Target Amount for each Clinical Episode category is the category volume in the Performance Period multiplied by the Target Price. For PGPs that trigger Clinical Episodes at more than one ACH, the calculation accounts for the volume distribution of Clinical Episodes across ACHs at which they are initiated. To apply the PGP-ACH Target Prices to the overall Clinical Episode category, the PGP's Target Prices are volume-weighted to account for the number of Performance Period Clinical Episodes occurring at each ACH for each Clinical Episode category.

- **Step 6. Determine Total Performance Period Target Amount:** Multiply final Target Prices by Performance Period Clinical Episode volume for each Episode Initiator and Clinical Episode category.[13]
    - **Step 6a.** Count the number of Clinical Episodes assigned to an Episode Initiator for a specific Clinical Episode category in the Performance Period. For a PGP that practices across multiple ACHs, count the number of Clinical Episodes at each ACH separately.
    - **Step 6b.** For each Episode Initiator and Clinical Episode category, multiply the final Target Prices **(Step 5)** by the number of Clinical Episodes in the Performance Period **(Step 6a)**. For ACHs or PGPs that initiate Clinical Episodes at a single ACH for the applicable category, the result is the Total Performance Period Target Amount. For PGP Episode Initiators, calculate the Clinical Episode volume-weighted sum of the Target Prices of all the ACHs where the PGP Episode Initiator is attributed Clinical Episodes. The weights are the number of Performance Period Clinical Episodes in a given Clinical Episode category initiated at each ACH during the Performance Period.

Table 5 provides a sample calculation with fabricated data of Total Performance Period Target Amounts for two ACH (H1000 and H2000) and one PGP (P000) Episode Initiators. The PGP, P000, is attributed Clinical Episodes at only one ACH (H1000) for Clinical Episode category CE1 while it is attributed Clinical Episodes across two ACHs (H1000 and H2000) for Clinical Episode category CE2.

[13] The mathematical expression for the Total Performance Period Target Amount is:
$Total\ Performance\ Period\ Target\ Amount_{m,ce,t} = \sum_{h \in H} Final\ Target\ Price_{m,h,ce,t} * Number\ of\ Clinical\ Episodes_{m,h,ce,t.}$
where:
Number of Clinical Episodes$_{m,h,ce,t}$ = the sum of all Clinical Episodes in time period T for the given m, h, ce, and t.
T(m,h,ce,t) will be empty for all *h*ϵ*H* at which the Episode Initiator is not attributed a Clinical Episode.

Table 5: Total Performance Period Target Amount Sample Calculation

Episode Initiator	PGP/ ACH	ACH CCN Associated with Initiating Claim	Clinical Episode Category	Performance Period Clinical Episode Count	Step 2a	Step 5		Step 6
					Ratio of Real Dollars to Standardized Dollars	Target Price (Standardized Dollars)	Final Target Price (Real Dollars)	Total Performance Period Target Amount (Real Dollars)
H1000	ACH		CE1	34	1.01	$24,290	$24,533	$834,122
H1000	ACH		CE2	15	1.04	$18,112	$18,836	$282,540
H1000	ACH		CE3	28	0.99	$53,248	$52,716	$1,476,048
H1000	ACH		CE4	45	0.89	$33,039	$29,405	$1,323,225
H1000	ACH		CE5	52	1.11	$24,722	$27,441	$1,426,932
H2000	ACH		CE1	12	1.02	$20,099	$20,501	$246,012
H2000	ACH		CE2	1	1.01	$37,190	$37,562	$37,562
H2000	ACH		CE3	14	0.86	$17,574	$15,114	$211,596
H2000	ACH		CE4	150	0.93	$21,157	$19,676	$2,951,400
P000	PGP	H1000	CE1	15	1.01	$31,434	$31,748	$476,220
P000	PGP	H1000	CE2	7	1.05	$31,898	$33,493	$545,231
P000	PGP	H2000	CE2	10	1.05	$29,598	$31,078	$545,231

Note: Examples are not associated with the fabricated data used in other BPCI Advanced specifications documents.
All dollar values are rounded to the nearest dollar and ratios are rounded to two decimal places.
For PGPs that initiate Clinical Episodes in the same category across multiple ACHs, Total Performance Period Target Amounts are rolled up to the PGP level. Refer to PGP P000 CE2 for an example.

7 CALCULATE COMPOSITE QUALITY SCORE

An important feature of BPCI Advanced is the use of quality performance data to adjust Reconciliation amounts for Participants. By tying payment to performance on quality measures, CMS aims to incentivize providers to improve quality of care while improving efficiency. For each Clinical Episode category and Episode Initiator, up to seven quality measures are weighted to calculate the Composite Quality Score (CQS) and CQS Adjustment Amount, which is then applied to the Negative/Positive Total Reconciliation Amounts during true-up calculations to calculate the Adjusted Negative/Positive Total Reconciliation Amount for each Episode Initiator. Using the quality measurement data that are calculated once per year, the CQS Adjustment Amount will be first incorporated in the Fall 2020 true-up and continue to be incorporated in any subsequent true-ups for a given Performance Period. The CQS Adjustment Amount for Model Year 3 will be applied in Fall 2021 to allow for changes in CQS from year to year. The following subsections introduce the BPCI Advanced quality measures and provide the step-by-step methodology for calculating the CQS and CQS Adjustment Amount. Data shown throughout this section are fabricated to illustrate CQS calculations.[14]

7.1 Quality Measures

CMS selected seven quality measures to ensure quality performance can be assessed across the full range of Clinical Episode categories offered under the BPCI Advanced model. Table 6 lists quality measures that have been selected to calculate Episode Initiator level CQS for Model Years 1 and 2. CMS may update the list of quality measures for future Model Years.

[14] Fabricated data used in this section are not associated with other fabricated data used throughout the rest of this document or in other BPCI Advanced specifications documents.

Table 6: BPCI Advanced Quality Measures

Quality Measure	Quality Measure Category Abbreviation	Guiding NQF / PSI #[15]	Hospital/ Physician Based[16]	MIPS (Y/N)	Applicable Clinical Episode Categories
All-cause Hospital Readmission Measure	All-Cause Readmissions	NQF #1789	Hospital Based	Y	All Inpatient and Outpatient Clinical Episode categories
Advance Care Plan	ACP	NQF #0326	Episode Initiator Based	Y	All Inpatient and Outpatient Clinical Episode categories
Perioperative Care: Selection of Prophylactic Antibiotic: First or Second Generation Cephalosporin	Perioperative Care	NQF #0268	Episode Initiator Based	Y	Back and Neck Except Spinal Fusion (Inpatient and Outpatient) Cardiac Valve Cervical Spinal Fusion Combined Anterior Posterior Spinal Fusion Coronary Artery Bypass Graft (CABG) Double Joint Replacement of the Lower Extremity (DJRLE) Hip and Femur Procedures Except Major Joint Lower Extremity and Humerus Procedure Except Hip, Foot, Femur Major Bowel Procedure Major Joint Replacement of the Lower Extremity (MJRLE) (Inpatient) Major Joint Replacement of the Upper Extremity
Hospital-Level Risk-Standardized Complication Rate Following Elective Primary Total Hip Arthroplasty and/or Total Knee Arthroplasty	RSCR Following THA/TKA	NQF #1550	Hospital Based	N	Double Joint Replacement of the Lower Extremity (DJRLE) Major Joint Replacement of the Lower Extremity (MJRLE) (Inpatient)

[15] Please note that several measures were adapted from NQF-endorsed measures; some of the measure specifications were changed for use in the BPCI Advanced model. NQF has not reviewed or approved the revised measure specifications. Any deviations from these measure specifications will be noted.

[16] This column refers to the level at which the NQF/ PSI measure is calculated. All measures will be applied to all participating Episode Initiators. Where the endorsed measure is hospital-based, the measure is adjusted to apply to the PGP. The NQF-endorsed Perioperative Care measure is physician-based, but it will be adjusted to apply to the hospital. Note that these represent deviations from NQF/PSI specifications.

Quality Measure	Quality Measure Category Abbreviation	Guiding NQF / PSI #	Hospital/ Physician Based	MIPS (Y/N)	Applicable Clinical Episode Categories
Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate Following Coronary Artery Bypass Graft Surgery	RSMR Following CABG	NQF #2558	Hospital Based	N	CABG
Excess Days in Acute Care after Hospitalization for Acute Myocardial Infarction	EDAC After AMI	NQF #2881	Hospital Based	N	AMI
CMS Patient Safety Indicators – 90 v.10.0	CMS PSI - 90	NQF #0531/PSI #90	Hospital Based	N	All Inpatient Clinical Episodes

7.2 CQS Calculation

For each Episode Initiator, performance on multiple quality measures is combined to calculate the CQS and CQS Adjustment Amount that is applied during true-up calculations to the Negative and Positive Total Reconciliation Amounts. Below is a step-by-step methodology for calculating the CQS.

- **Step 7. Convert Raw Quality Measures into Scaled Scores**: For each quality measure category and Episode Initiator, scale the raw score by comparing it to the distribution of raw scores among the cohort in the baseline period for that measure. For the quality measure categories that are hospital-based, the cohort is the national set of ACHs and the baseline period is CY2018. All ACHs will be referred to as Episode Initiators in the text below, regardless of whether or not they are participating in the BPCI Advanced model. For the quality measures that are Episode Initiator-based, the cohort is the set of Episode Initiators (ACHs and PGPs) that are participating in BPCI Advanced and the baseline period and includes all Clinical Episodes that have Anchor Stay discharge dates or Anchor Procedure completion dates in the second half of CY2019. Assign the Episode Initiator a scaled score equal to the percentile to which the Episode Initiator's raw score would have belonged in the baseline period. If the raw score could have belonged to either of two percentiles, assign the higher one. If an Episode Initiator has a raw score greater than the maximum of the raw scores for the cohort in the baseline period, assign it a scaled score of 100, if an Episode Initiator has a raw score less than the minimum of the raw scores for the baseline period, assign it a scaled score of 0. If an Episode Initiator has

no raw quality score, do not assign them a scaled quality score.[17] Please refer to Tables 7a and 7b for an example of scaled quality score determination.

[17] Episode Initiators that do not meet the minimum observation threshold for the quality measure category will be treated as having a missing raw quality score.

Table 7a. Example of Scaling Raw Quality Scores, Distribution of Raw Quality Scores of the Cohort in the Baseline

Percentile	Raw scores (Score is Higher for Better Performance)	
	Lower bound	Upper bound
1	28	32
…	…	…
71	49	49
72	50	53
73	53	58
…	…	…
100	87	90

Table 7b: Example of Scaling Raw Quality Scores, Performance Period Scores

Episode Initiator	Raw Quality Score	Scaled Quality Score
0012	52	72
1139	53	73
5212	56	73
4132	49	71
1528	23	0
3412	95	100
2336	-	-

- **Step 8. For Hospital-Based Quality Measure Categories, Calculate Scaled Quality Scores for the PGPs.** For each combination of PGP and hospital-based quality measure category, calculate the scaled quality measure score as the average of the non-missing scaled quality measure scores of the ACHs at which the PGP initiates Clinical Episodes, weighted by the number of Clinical Episodes across all Clinical Episode categories that were attributed to the PGP and initiated at the ACH during the Performance Period.

Table 8: Example of Calculating PGP Scores in Hospital-Based Quality Measure Categories

Quality Measure Category	ACH A		ACH B		PGP Scaled Quality Score
	Count of Performance Period Clinical Episodes Attributed to the PGP and Initiated at ACH A	ACH Scaled Quality Measure	Count of Performance Period Clinical Episodes Attributed to the PGP and Initiated at ACH B	ACH Scaled Quality Measure	
All-cause readmissions	400	68	100	92	72.8
RSCR Following THA/TKA		38		-	38.0
RSMR Following CABG		-		-	-
EDAC After AMI		22		78	33.2
Composite PSI		71		87	74.2

- **Step 9. Compute the Composite Quality Score.**
  - **Step 9a.** For each Episode Initiator-quality measure category combination, calculate the total number of Clinical Episodes that the Episode Initiator was attributed across all Clinical Episode Categories that are applicable to the quality measure category.

    The example shown in Table 9 is for an Episode Initiator that was attributed Clinical Episodes in IP-AMI, IP-CABG, IP-PCI, and OP-PCI. Of these Clinical Episode categories, only IP-CABG is applicable to the Perioperative Care quality measure category. Note that many Clinical Episodes are included in the total number of applicable Clinical Episodes for multiple quality measure categories.

Table 9: Example of Calculating the Total Number of Applicable Clinical Episodes for Each Quality Measure Category

	Quality Measure Category Applicable to Clinical Episode Category?				Number of Clinical Episodes Attributed to the Episode Initiator				
	IP-AMI	IP-CABG	IP-PCI	OP-PCI	IP-AMI	IP-CABG	IP-PCI	OP-PCI	Total Applicable CEs
Attributed Clinical Episodes					200	300	200	1000	
Applicable Clinical Episodes									
All-Cause Readmission	Y	Y	Y	Y	200	300	200	1000	1700
ACP	Y	Y	Y	Y	200	300	200	1000	1700
Perioperative Care	N	Y	N	N	0	300	0	0	300
RSCR Following THA/TKA	N	N	N	N	0	0	0	0	0
RSMR following CABG	N	Y	N	N	0	300	0	0	300
EDAC After AMI	Y	N	N	N	200	0	0	0	200
Composite PSI	Y	Y	Y	N	200	300	200	0	700

- **Step 9b:** Calculate each Episode Initiator's CQS and CQS Adjustment Amount as the average of their non-missing scaled quality scores, weighted by the number Clinical Episodes attributed to the Episode Initiator that are applicable for each quality measure category.

  Table 10 continues the example for the Episode Initiator described for Table 9. In this example, the Episode Initiator had enough THA or TKA procedures to receive a quality score for RSCR Following THA/TKA but the Episode Initiator was not attributed any Clinical Episodes that were applicable to this measure (MJRLE or DJRLE Clinical Episodes). Consequently, the RSCR Following THA/TKA quality measure does not contribute to the CQS. Meanwhile, the Episode Initiator had Clinical Episodes for which RSMR following CABG was relevant but a missing quality score for this measure. Due to the missing quality score, RSMR following CABG will not be included in the CQS for this Episode Initiator.

Table 10: Calculating the CQS

Quality Measure	Scaled Quality Score	Total Applicable CEs	Normalized Weight
All-Cause Readmission	56.23	1700	0.370
ACP	47.17	1700	0.370
Perioperative Care	54.21	300	0.065
RSCR Following THA/TKA	76.10	0	0.000
RSMR following CABG	-	300	0.000
EDAC After AMI	72.24	200	0.043
Composite PSI	21.56	700	0.152
CQS	**48.17**		

8 CALCULATE RECONCILIATION AMOUNTS

This section describes how to calculate unadjusted Reconciliation amounts that will be disseminated to Participants during the initial Reconciliation. The initial Reconciliation amount does not adjust for the Episode Initiator's performance on quality measures.[18] This step includes applying the stop-loss/stop-gain provision and calculating NPRA/Repayment Amount. To illustrate how to calculate Reconciliation amounts, this section uses fabricated data, presented in Tables 11 through 13. Table 11 shows how to calculate Reconciliation amounts at the Episode Initiator-Clinical Episode category level. Tables 12 and 13 show how to aggregate these Reconciliation amounts to the Episode Initiator and Convener Participant levels respectively.

To calculate Reconciliation amounts for Model Years 1 and 2, take the following steps:

- **Step 10 Calculate Positive Reconciliation Amount and Negative Reconciliation Amount at the Clinical Episode category level**: For each Episode Initiator and Clinical Episode category, calculate Reconciliation amount as the difference between the Total Performance Period Target Amount **(Step 6)** and final Performance Period Clinical Episode payments **(Step 2)**.[19] If the Total Performance Period Target Amount for an Episode Initiator exceeds final Performance Period Clinical Episode payments during the Performance Period, it results in a Positive Reconciliation Amount. If the Total Performance Period Target Amount is less than the final Performance Period Clinical Episode payments, the result is a Negative Reconciliation Amount.

[18] Note that quality adjustments will be applied to Reconciliation amounts in the true-up calculations through the CQS and CQS Adjustment Amount. For all initial Reconciliations and initial true-ups occurring in spring, when the CQS Adjustment Amount is not yet available, the temporary CQS Adjustment Amount will be a 0 out of 100 for all Episode Initiators, pending replacement.

[19] Represented mathematically as $Positive/Negative\ Reconciliation\ Amount_{m,ce,t} = Total\ Performance\ Period\ Target\ Amount_{,m,ce,t} - Final\ Performance\ Period\ Clinical\ Episode\ Payment_{m,ce,t}$

Table 11: Calculate Positive/Negative Reconciliation Amount in Real Dollars

Episode Initiator	PGP/ ACH	Clinical Episode Category	Number of Performance Period Clinical Episodes	Step 2a	Final Performance Period Clinical Episode Payments		Total Performance Period Target Amount	Step 10
					Step 1	Step 2b	Step 6	
				Ratio of Real Dollars to Standardized Dollars	Standardized Dollars	Real Dollars	Real Dollars	Positive/Negative Reconciliation Amount in Real Dollars
H1000	ACH	CE1	34	1.01	$945,744	$955,201	$834,122	-$121,079
H1000	ACH	CE2	15	1.04	$378,315	$393,448	$282,540	-$110,908
H1000	ACH	CE3	28	0.99	$1,452,500	$1,437,975	$1,476,048	$38,073
H1000	ACH	CE4	45	0.89	$2,422,260	$2,155,811	$1,323,225	-$832,586
H1000	ACH	CE5	52	1.11	$1,540,812	$1,710,301	$1,426,932	-$283,369
H2000	ACH	CE1	12	1.02	$215,328	$219,635	$246,012	$26,377
H2000	ACH	CE2	1	1.01	$20,798	$21,006	$37,562	$16,556
H2000	ACH	CE3	14	0.86	$215,166	$185,043	$211,596	$26,553
H2000	ACH	CE4	150	0.93	$3,198,300	$2,974,419	$2,951,400	-$23,019
P000	PGP	CE1	15	1.01	$238,218	$240,600	$476,220	$235,620
P000	PGP	CE2	17	1.05	$231,963	$243,561	$545,231	$301,670

Note: Examples are not associated with the fabricated data used in other BPCI Advanced specifications documents. All dollar values are rounded to the nearest dollar and ratios are rounded to two decimal places.

- **Step 11. Calculate Positive Total Reconciliation Amount and Negative Total Reconciliation Amount at the Episode Initiator level:** For an Episode Initiator, aggregate Positive Reconciliation Amounts and Negative Reconciliation Amounts (**Step 10**) across all Clinical Episode categories to obtain either Positive Total Reconciliation Amount or Negative Total Reconciliation Amount.
- **Step 12. Calculate Adjusted Positive Total Reconciliation Amount and Adjusted Negative Total Reconciliation Amount at the Episode Initiator Level:** For the initial Reconciliation, calculate the Adjusted Positive Total Reconciliation Amount and the Adjusted Negative Total Reconciliation Amount by temporarily withholding the potential CQS Adjustment Amount at risk (i.e., 10% for Model Years 1 and 2) to the Positive Total Reconciliation Amount and the Negative Total Reconciliation Amount. Specifically, at the Episode Initiator level, the Adjusted Positive Total Reconciliation Amount will equal 90% of the Positive Total Reconciliation Amount, while the Adjusted Negative Total Reconciliation Amount will equal the Negative Total Reconciliation Amount.[20] This is the equivalent of CQS of zero and ensures that Participants will only receive increases (or

[20] If $Total\ Reconciliation\ Amount_{m,t} > 0$ then $Adjusted\ Total\ Reconciliation\ Amount_{m,t} = Total\ Reconciliation\ Amount_{m,t} * 0.9$. If $Total\ Reconciliation\ Amount_{m,t} < 0$ then $Adjusted\ Total\ Reconciliation\ Amount_{m,t} = Total\ Reconciliation\ Amount_{m,t}$. Where Total Reconciliation Amount is represented mathematically as $Total\ Reconciliation\ Amount_{m,t} = \sum_{ce \in CE} * Reconciliation\ Amount_{m,ce,t}$

no change) in their Adjusted Total Reconciliation Amount associated with their CQS during true-up calculations.[21] During the true-up Reconciliations occurring in fall each year, as applicable, apply the CQS Adjustment Amount to the Positive Total Reconciliation Amount and Negative Total Reconciliation Amount to revise the Adjusted Positive Total Reconciliation Amount and Adjusted Negative Total Reconciliation Amount respectively from earlier Reconciliation calculations when the CQS was not available (Refer to **Step 18** for more details.)

- **Step 13. Apply the 20% stop-loss/stop-gain provision:** As shown in Table 13, if the Episode Initiator's Adjusted Positive Total Reconciliation Amount (**Step 12**) is greater than 20% of the Total Performance Period Target Amount (**Step 6**) or if the absolute value of its Adjusted Negative Total Reconciliation Amount is greater than 20% of the Total Performance Period Target Amount, then apply the 20% stop-loss/stop-gain provision.[22] The Adjusted Positive/Negative Total Reconciliation Amount that incorporates 20% stop-loss/stop-gain where applicable is the capped Adjusted Positive/Negative Total Reconciliation Amount.

Table 12: Calculate Adjusted Positive/ Negative Reconciliation Amount at the Episode Initiator Level

Episode Initiator	Step 11	Step 12	Step 6	Step 13	Step 13
	Positive/Negative Total Reconciliation Amount	Adjusted Positive/Negative Total Reconciliation Amount	20% of Total Performance Period Target Amount	Apply Stop-Loss/Stop-Gain	Capped Adjusted Positive/ Negative Total Reconciliation Amount
H1000	-$1,309,869	-$1,309,869	$1,068,573	Yes	-$1,068,573
H2000	$46,467	$41,820	$689,314	No	$41,820
P000	$537,290	$483,561	$204,290	Yes	$204,290

Note: Examples are not associated with the fabricated data used in other BPCI Advanced specifications documents. All dollar values are rounded to the nearest dollar.

- Step 14. Calculate NPRAs and Repayment Amounts: **As shown in Table 13**, for each Participant, aggregate the capped Adjusted Positive/ Negative Total Reconciliation Amount (Step 13) across all applicable Episode Initiators to obtain either NPRA or

[21] In subsequent true-up calculations when an updated CQS is available, the application of a CQS adjustment will result in either no change to, in the case of a CQS of zero, or a positive adjustment to, either the Adjusted Positive Total Reconciliation Amount or Adjusted Negative Total Reconciliation Amount, in the case of a CQS which exceeds 0.

[22] Represented as:
If Adj Positive Total Reconciliation Amount, then min(Adj Positive Total Reconciliation Amount, 20% of Total Performance Period Target Amount),
If Adj Negative Total Reconciliation Amount, then min(abs(Adj Negative Total Reconciliation Amount), 20% of Total Performance Period Target Amount)

Repayment Amount. Skip this step if the Episode Initiator is a Non-Convener Participant.[23]

Table 13: Calculate NPRAs/ Repayment Amounts at the Convener Participant Level

Episode Initiator	Step 13	Step 14
	Capped Adjusted Positive/ Negative Total Reconciliation Amount	Convener-Level NPRA/ Repayment Amount
H1000	-$1,068,573	-$822,463
H2000	$41,820	
P000	$204,290	

Note: This table assumes H1000, H2000, and P000 from Table 13 are now the complete list of Episode Initiators under the Convener Participant. Examples are not associated with the fabricated data used in other BPCI Advanced specifications documents. All dollar values are rounded to the nearest dollar.

[23] For a Non-Convener Participant, the capped Adjusted Positive/Negative Total Reconciliation amount in Step 13 is the NPRA/ Repayment Amount, respectively.

9 CALCULATE TRUE-UP AMOUNTS

This section describes how to perform true-up calculations to update initial Reconciliation amounts and prior true-ups using claims processed as of a later date as well as quality measure data. True-ups calculations are conducted approximately six months and one year after initial Reconciliation occurs. Both true-up calculations will factor in newly processed claims. Quality measurement data that is calculated once per year, will be first incorporated in the Fall true-up and continue to be incorporated in any subsequent true-ups for a given Performance Period.[24]. To illustrate true-up calculations, this section uses fabricated data.[25]

- **Step 15. Recalculate Performance Period Clinical Episode Payments:** Using the set of newly processed claims data, follow **Steps 1-2** to calculate final Performance Period Clinical Episode payments.
- **Step 16. Recalculate Final Target Prices and Total Performance Period Target Amounts:** Using the new set of claims data, follow **Steps 3-6** to calculate final Target Prices and Total Performance Period Target Amounts. Note that the updated set of claims data will only reflect changes in Target Price components that use realized Performance Period data, i.e. updated PCMA, updated Relative Case Mix, and realized ratio of real to standardized dollars.
- **Step 17. Recalculate Reconciliation Amounts:** Follow **Steps 10-11** to recalculate Positive and Negative Total Reconciliation Amounts at the Episode Initiator level.
- **Step 18. Incorporate CQS into Positive/Negative Total Reconciliation Amount:** Apply the CQS Adjustment Amount to the Positive Total Reconciliation Amount and Negative Total Reconciliation Amount using the following steps. Table 14 below shows how this calculation is implemented using the example from Section 8.
    - **Step 18a.** Calculate the CQS Adjustment Amount, which reflects the amount by which the Total Reconciliation Amount will be adjusted as a result of the Episode Initiator's performance on the CQS. First, calculate the CQS Adjustment Percent. For Model Years 1 and 2, the maximum percent at risk is 10%; thus an Episode Initiator may have the magnitude of its Total Reconciliation Amount reduced by 0 to 10%. For Positive Total Reconciliation Amounts, the CQS Adjustment Percent is inversely proportional to the CQS and scaled to 10% (i.e., CQSs of 0 and 100 have CQS Adjustment Percentages of 10% and 0%, respectively). For Negative Total

[24] For Performance Period 1 2019, CQS will be applied for the first time to the second true-up; while for Performance Period 2 2019, CQS will be applied to for the first time to the first true-up and carried through to the second.

[25] Fabricated data used in this section are not associated with fabricated data used in other BPCI Advanced specifications documents.

Reconciliation Amounts, the CQS Adjustment Percent is proportional to the CQS and scaled to 10% (i.e., CQSs of 0 and 100 have CQS Adjustment Percentages of 0% and 10%, respectively). Please refer to the equation in the footnote for the exact calculation.[26] Next, multiply the CQS Adjustment Percent by the Episode Initiator-level Total Reconciliation Amount to get the CQS Adjustment Amount, which will be positive for Positive Total Reconciliation Amounts, and negative for Negative Total Reconciliation Amounts.

- **Step 18b.** Subtract the CQS Adjustment Amount from the Episode-Initiator level Total Reconciliation Amount (**Step 17**) to get the Adjusted Total Reconciliation Amount for each Episode Initiator. For Negative Total Reconciliation Amounts this corresponds to a reduction in the amount owed to CMS (provided the CQS Score was greater than 0), and for Positive Total Reconciliation Amounts this corresponds to a decrease in the amount CMS owes the Participant (provided the CQS Score was less than 100).
- **Step 18c.** Repeat **Step 13** to apply the 20% stop-loss/stop-gain provision to get the capped Adjusted Positive/Negative Total Reconciliation Amount for each Episode Initiator.
- **Step 18d** For Convener Participants, sum all their Episode Initiators' capped Adjusted Positive Total Reconciliation Amounts and Adjusted Negative Total Reconciliation Amounts to obtain NPRA/Repayment Amount.

Table 14: Calculate NPRA/Repayment Amount with CQS Payment Adjustment at the Convener Participant Level

Episode Initiator	Step 17	Step 9	Step 18a		Step 18b	Step 18c	Step 18c	Step 18c	Step 18d
	Positive/ Negative Total Reconciliation Amount	CQS	CQS Adjustment Percent	CQS Adjustment Amount	Adjusted Positive/Negative Total Reconciliation Amount	20% of Volume Weighted Target Price	Stop-Loss/ Stop-Gain	Capped Adjusted Positive/ Negative Total Reconciliation Amount	Convener-Level NPRA/ Repayment Amount
H1000	-$1,309,869	50	5%	-$65,493	-$1,244,376	$1,068,573	Yes	-$1,068,573	-$819,675
H2000	$46,467	65	4%	$1,859	$44,608	$689,314	No	$44,608	
P000	$537,290	77	2%	$10,746	$526,544	$204,290	Yes	$204,290	

Data shown are from the initial Reconciliation calculation examples. In practice, true-up calculations will use newly processed claims data. Examples are not associated with the fabricated data used in other BPCI Advanced specifications documents. All dollar values are rounded to the nearest dollar.

[26] Represented mathematically as $CQS\ Adjustment\ Amount_{m,t} = CQS\ Adjustment\ Percent_{m,t} * Total\ Reconciliation\ Amount_{m,t}$ where:

$$CQS\ Adjustment\ Percent_{m,t} = \begin{cases} if\ Total\ Reconciliation\ Amount_{m,t} > 0\ then, \left(10\% - 10\% * \frac{CQS_{m,t}}{100}\right) \\ if\ Total\ Reconciliation\ Amount_{m,t} < 0\ then, 10\% * \frac{CQS_{m,t}}{100} \end{cases}$$

- **Step 19. Calculate True-Up amount:** Once the NPRA/Repayment Amounts are calculated for the true-up cycle, calculate true-up amount for each Participant by comparing the new amount with the previous amount. For a Participant, the true-up amount will be the difference between the NPRA/Repayment Amount in the current true-up period and NPRA/Repayment Amount in the previous period.[27]

Table 15: Calculate True-Up Amount at the Convener Participant Level

Step 18d	Step 14	Step 19
Recalculated NPRA/Repayment Amount	NPRA/Repayment Amount from Previous Calculation	True-Up Amount
-$819,675	-$822,463	$2,788

The True-Up amount is always calculated as the difference between the NPRA/Repayment Amount calculated for the current True-Up period and the most recent previous NPRA/Repayment Amount calculation.

[27] Represented mathematically as $\textit{True-Up Amount}_{P,t} = \textit{NPRA Amount/Repayment Amount}_{P,t} - \textit{NPRA Amount/Repayment Amount}_{P,(t-1)}$, where,
P is the Participant
t is the applicable Performance Period
(t-1) is the previous Performance Period

10 CALCULATE EXCESS SPENDING AMOUNTS

To reduce Participants' incentives to withhold or delay medically-necessary care until after a BPCI Advanced Clinical Episode ends, BPCI Advanced Participants are responsible for statistically implausible increases in post-episode spending between days 91 and 120 of the Post-Episode Spending Monitoring Period. The Post-Episode Spending Calculations for a Performance Period will occur at the same time as the first true-up calculations and will be recalculated during the second true-up to account for newly processed claims. For example, Participants with Clinical Episodes ending between October 2018 and June 2019 will receive their first Post-Episode Spending Calculations in spring 2020.

- **Step 20. Attribute services and payments to the Post-Episode Spending Monitoring Period:** Considering all baseline period and Performance Period Clinical Episodes, attribute Parts A and B claims with a standardized payment amount greater than zero that overlap with days 91-120 of the Post-Episode Spending Monitoring Period.
- **Step 21. Apply payment aggregation logic for the Post-Episode Spending Monitoring Period:** For baseline period and Performance Period Clinical Episodes, follow **CE-Steps 14-18** to:
    - Apply BPCI Advanced exclusions criteria,
    - Prorate claims that extend before or after the Post-Episode Spending Monitoring Period, and
    - Calculate overall Post-Episode Spending payment amounts.
- **Step 22. Apply Setting-Specific Price Update Factor Associated with the Preceding Clinical Episode:** For constructing baseline period Post-Episode Spending, follow **CE-Steps 19-21** to update payments occurring in the Post-Episode Spending Monitoring Period to Performance Period dollars. Assign post-episode spending to baseline years using the Anchor Stay or Anchor Procedure end date of the preceding Clinical Episode.
- **Step 23. For each Clinical Episode category and Model Year sub-period, estimate a Clinical Episode-level risk adjustment model for Post-Episode Spending using the national set of baseline episodes**: Run a two-stage risk adjustment model to estimate baseline Post-Episode Spending similarly to **TP-Steps 1-4**. Run a separate risk-adjustment model for each sub-period of MY1&2 with Post-Episode Spending updated to the appropriate calendar and fiscal year (CY2018/FY2019, CY2019/FY2019, CY2019/FY2020), and for each Clinical Episode category.
    - **23a.** Drop episodes where the beneficiary died during the Clinical Episode window. (Note that Clinical Episodes where the beneficiary dies during the Post-Episode Spending Monitoring Period are retained.)

- **23b.** Estimate a compound log-normal risk adjustment model for the Post-Episode Spending. The Post-Episode Spending risk adjustment model differs from the compound log-normal risk adjustment model (TP-Step 2) in two main ways:
  - For Post-Episode Spending the compound-log normal model includes a zero node, to accommodate Clinical Episodes with no Post-Episode Spending.
  - For Post-Episode Spending, the peer group characteristics are not included in the model.[28]
- **23c.** Calculate the Clinical Episode level patient case-mix adjustment amount, as the predicted Clinical Episode level Post-Episode Spending conditional on the compound log-normal model and the patient characteristics.
- **23d.** Capture coefficients for national trends, and their variance-covariance matrix using the procedure outlined in TP-Step 4, but excluding the peer group interactions from the regression.

- **Step 24. For each ACH and PGP in each Clinical Episode category, calculate the Post-Episode Spending penalty threshold as the upper bound of the 99.5% confidence interval for the Post-Episode Spending Target Amount**: The structure of the Post-Episode Spending Benchmark Prices and Target Amounts follow the same structure as the in-Episode Spending Target Amounts with a few exceptions:
  - Clinical Episodes where the beneficiary died during the episode window are not included in the Benchmark Prices or the Target Amounts.
  - Rather than a peer adjusted trend factor, there is a national trend factor.
  - Natural disaster exclusions are determined based on in-episode spending only.

  To determine the upper bounds of the 99.5% confidence intervals of the Post-Episode Target Amounts, conduct a Krinsky and Robb simulation with a sufficiently high number of iterations. For each EI and Clinical Episode category, take the 99.75th percentile of the Post-Episode Target Amounts across the iterations.
- **Step 25. Calculate Performance Period Post-Episode spending:** For all attributed Performance Period Clinical Episodes, aggregate Performance Period post-episode spending amounts to the Clinical Episode category level following the methodology in **Step 1**.
- **Step 26. Convert Post-Episode Spending penalty threshold and Performance Period Post-Episode spending to real dollars:** Convert the post-episode spending penalty threshold and Performance Period post-episode spending to real dollars by multiplying each amount by a ratio of the sum of real post-episode spending to sum of standardized

[28] This prevents EIs from being advantaged/ disadvantaged by the size of their peer group, since otherwise the volume of EIs in the peer group affects the size of the confidence intervals for the Post-Episode Spending Amounts.

post-episode spending in the Performance Period for each Episode Initiator and Clinical Episode category.

- **Step 27. Reconcile the Post-Episode Spending penalty threshold against realized Performance Period Post-Episode Spending:** If Performance Period Post-Episode spending minus the Post-Episode penalty threshold is greater than zero, this amount represents the Excess Spending Amount owed to Medicare. If Performance Period Post-Episode spending minus the Post-Episode penalty threshold is less than or equal to zero, the Episode Initiator is not liable for an Excess Spending Amount in the Clinical Episode category.
- **Step 28. Calculate Excess Spending Amounts at the Convener Participant level:** For all Episode-Initiators under a Convener Participant, aggregate the Episode Initiator-Clinical Episode category level Excess Spending Amounts to the Convener Participant level.
- **Step 29. Recalculate Excess Spending Amount:** During the second true-up calculation for each Performance Period, repeat **Steps 20-30** using newly processed claims.
- **Step 30. Calculate Excess Spending True-Up Amount:** Once the new amounts are calculated for the true-up cycle, calculate true-up amount for each Participant by comparing the new amount with the previous amount.