

## Center for Medicare and Medicaid Services

### Pricing Methodology for Model Years 1 and 2 Webinar

May 17<sup>th</sup>, 2018      1:00 pm – 2:30 pm ET

#### Transcript

>> Ladies and gentlemen, this is the operator. Today's conference is scheduled to begin momentarily. Until that time, place on music hold. Thank you for your patience.

#### **Moderator:**

>> Good day, ladies and gentlemen. And thank you for standing by. Welcome to today's webcast. My name is Huey and I will be the web event specialist assisting today. All lines have been placed on mute to prevent any background noise. Please note today's webcast is being recorded. Although there will not be any formal question and answer period, you are encouraged to submit any questions you might have into the Q & A box on the left side of your browser. If you would like to have a full screen view click the full screen button on the lower right-hand corner of your screen. Press the escape key on your keyboard to return to original view. For optimal viewing participation please disable your pop-up blockers. For accessibility options please click on the closed caption button on the lower left-hand corner of your screen. Finally, should you need technical assistance, first refresh your browser. If that does not resolve the issue, click the option on the upper right-hand corner of your screen for online troubleshooting. It is now my pleasure to turn today's webcast over to Mike McCormick. The floor is yours.

#### **Mike McCormick:**

>> Thank you. Good afternoon. Again, my name is Mike McCormick. On behalf of the CMS Innovation Center, welcome to today's webinar where we will present a detailed review for Model Years One and Two. Our payment contractor for this model is Acumen LLC, and they will be conducting this webinar.

Before we get started, I want to go over a few items. I want to state this material is complicated and the information and examples will be provided. Therefore, if you feel like you missed something, you can expect the recording of this webinar to be available after 6:00 p.m. today. To access the recording, use

the registration link you received when you registered, and by the end of next week we will also have the following documents available on the BPCI Advanced website: The PowerPoint slides with the appendix, and the mathematical formulas that will be presented, the Excel workbook with the sample data presented during the webinar, the audio file of the event, and the transcript of the webinar.

Additionally, we are also planning to post a more user-friendly webcast called “Pricing Methodology” for clinicians and administrators, that we'll review in much of this material, but at a higher level in the coming weeks. I also want to note that CMS has completed the processing of data requests and attestations, or DRA forms, that were submitted by the BPCI Advanced Applicants, and we are planning to reach out to the two primary points of contact listed for each approved Applicant organization next week.

However, Applicants with incomplete DRAs will not be receiving this message. The e-mail will include a key piece of information: the unique BPID that has been assigned to each application ID, which will be required to complete the registration process on the data portal. The BPIDs for BPCI Advanced will consist of eight digits, to differentiate them from the BPCI initiative which had seven-digit BPIDs. In addition, the e-mail will provide detailed instructions for data and Target Prices will be disseminated. At this time, we will still be targeting late May for the initial data release.

And finally, we want to provide a quick update on the initial analysis evaluating the impact of removing total knee arthroplasty, or TKA from the inpatient-only list from BPCI Advanced. We are evaluating our strategy for dealing with this change, but we will provide you updates as they become available. It will not be discussed in today's presentation, but we want to highlight this up front, due to the amount of interest and questions we have received from our Applicants.

Now, I would like to introduce Kyle Buika with Acumen, LLC, who will be the main speaker for today's presentation.

**Kyle Buika:**

>> Thank you, Mike. Good afternoon, everyone. Today we will be presenting on the methodology used to build Target Prices for Model Years One and Two in the BPCI Advanced model. It will follow the steps available on Innovation Center's BPCI Advanced web page, elaborating on details of many of the steps. In this webinar, we'll first provide an overview of Target Prices. We will then discuss the risk adjustment methodology used to ensure that Target Prices account for variation in Clinical Episode spending, that's correlated with patient case mix and acute care hospital peer groups. Next, the presentation focuses on constructing benchmark prices and Target Prices for Episode Initiators, both acute care hospitals (hereafter referred to as ACHs or hospitals interchangeably) and physician group practices (hereafter referred to as PGPs).

The presentation will conclude with a walk-through of a sample Target Price Summary workbook. A version of this workbook will be provided to each Applicant in the coming weeks, documenting details of preliminary Target Prices for each Applicant's Episode Initiators for each Clinical Episode category.

We begin with an overview of the BPCI Advanced Target Price, discussing first the essential features that go into the Target Prices and delving into components of the Target Price, as they apply to hospital and PGP Episode Initiators.

The BPCI Advanced Target Price incorporates five features: First, to ensure that an Episode Initiator is not unfairly penalized or rewarded for the relative costliness of the population it serves, the Target Price adjusts for patient case mix. It ensures a more complex patient population has a higher Target Price than one with a less complex case mix, everything else being equal.

Second, the Target Price method allows for trends in Clinical Episode spending that are distinct to hospitals' geographic regions, and other relevant characteristics. This allows for Episode Initiator's performance to be compared against similar peer groups. Peer groups are defined by the list of characteristics within regression models, as opposed to distinct groups delineated by a characteristic. The trends in Clinical Episode spending are determined prospectively and ensure an Episode Initiator can achieve savings in the model by out-performing their peers after accounting for differences in patient case mix between providers.

Third, the Target Prices encourage both high and low-cost providers to participate in BPCI Advanced. Given that BPCI Advanced is a voluntary program, the Target Price is designed to encourage both high- and low-cost providers to participate by incorporating Participants historical pricing and peer group characteristics, including census division and hospital-specific adjustments in the Target Price method. This results in Participants being benchmarked against their own historical spending and the spending levels of providers with similar characteristics. Most importantly, the Target Prices ensure that historically high-cost providers will receive attainable benchmarks. At the same time, historically efficient providers will see their Target Prices adjusted upwards towards the mean of their peer groups to prevent the "ratcheting effect" whereby Target Prices are increasingly lowered.

Specifically, the efficiency measure component of the Target Price, which will be discussed in detail on subsequent slides, incorporates a factor of their own historical spending into an Episode Initiator's Target Price. Greater efficiency in this case refers to lower Clinical Episode spending relative to other providers, after accounting for variation in spending driven by case mix and peer group characteristics. For example, a Participant that has higher historical Clinical Episode spending will also have a higher efficiency measure relative to a historically efficient Participant. Thus, after accounting for patient case mix, allowing for comparison between dissimilar Episode Initiators, this Participant will have a higher Target Price. This feature of the Target Price provides incentives for providers with historically high spending to join the model to achieve savings by lowering costs. In general, any Participant is capable of participating if they're able to lower their spending from their own historical levels after adjusting for factors out of their control.

Fourth, Target Prices are built to reward Participants' improvement over time. A result of the fourth essential feature of the BPCI Advanced Target Prices is that Episode Initiators must lower risk adjusted Clinical Episode spending to achieve savings in the model.

Lastly, the Target Price in conjunction with the Composite Quality Score promotes Medicare savings while improving or maintaining high-quality care. The combination of these essential features into the BPCI Advanced model aim to facilitate fair evaluation of Episode Initiators' performance in the

model, reinforcing the incentives for BPCI Advanced Participants to identify efficient methods for providing high-quality and low-cost care to Medicare beneficiaries.

With the essential features in mind, let's begin dissecting the components of the Target Prices for hospitals and PGPs. We begin with the Hospital Benchmark Price, which is also referred to as HBP. Since Clinical Episodes assigned to PGPs will occur at hospitals, the Hospital Benchmark Price serves as the foundation in building a PGP's price for Clinical Episodes at a specific hospital and will be discussed in subsequent slides. Furthermore, use of the firm Hospital Benchmark Price as the foundation of the PGP price is ideal given the constant fluctuations in physician affiliation with PGPs. A separate Target Price is constructed for each Clinical Episode category, for which a hospital has initiated baseline period Clinical Episodes. For example, if a hospital has sufficient Clinical Episodes in 31 of 32 Clinical Episode categories, then 31 Target Prices will be calculated and displayed in the Target Price Summary workbook for that hospital. We will describe in later slides what it means for a hospital to have a sufficient number of Clinical Episodes.

The BPCI Advanced Target Price is represented as the Hospital Benchmark Price (also referred to as HBP) after application of the CMS discount factor of three percent. HBP, in turn, is the product of the three components outlined in the table at the bottom of the slide. Standardized Baseline Spending, or SBS, accounts for a provider's historical efficiency by calculating risk and peer standardized Clinical Episode spending in the baseline period. This component reflects historical spending of a provider and incentivizes participants to lower spending. SBS is a major component of satisfying essential features three, four, and five as previously discussed. The patient case mix adjustment, or PCMA, accounts for varying levels of complexity in a hospital's patient case mix, which are correlated with Clinical Episode spending; that is, the severity in providers' patient case mix. PCMA is a major component of satisfying essential features one and five.

The peer-adjusted trend factor, or PAT Factor, serves two purposes: First, it adjusts for persistent differences in Clinical Episode spending levels across ACH peer groups. Second, it trends the Clinical Episode spending to the third quarter of 2019 based on trends in Clinical Episode spending during the baseline period within each peer group. In BPCI Advanced, peer groups are determined by hospital characteristics such as geographic region, urban vs rural location, and bed size. Note that including persistent differences in the PAT Factor will adjust Target Prices up or down based on differences in Clinical Episode spending for a peer group that are not explained by differences in patient case mix. For example, a PAT Factor of 0.85 does not immediately imply that a peer group's trend in cost has decreased from 1 to 0.85 between the baseline period in 2019 quarter three. Instead, this usually means that the peer group has historically lower Clinical Episode spending.

Let's assume that the factor in 2016 quarter four, which is the last period of the baseline period, is closer to 0.83. The difference between 0.83 and 0.85 in this example represents the actual trend in Clinical Episode spending in this peer group between the end of the baseline period and the Performance Period. This will be discussed in more detail later in the presentation.

Now we move to the construction of Target Prices for PGPs. For a PGP Episode Initiator, Target Prices are constructed at the PGP-ACH level for every hospital at which the PGP initiates Clinical Episodes. That is, if a PGP initiates Clinical Episodes in a particular category at five different hospitals in the baseline period, the PGP will receive five separate Target Prices. PGP-ACH Target Prices are calculated separately for each Clinical Episode category in which a PGP is assigned Clinical Episodes. For

example, if a PGP has Clinical Episodes in two Clinical Episode categories, across five different hospitals, then there will be ten PGP-ACH Target Prices for that PGP, two PGP-ACH Target Prices for each hospital or each ACH.

The PGP price builds upon the HBP, the Hospital Benchmark Price, of the hospital at which the Clinical Episodes are initiated. The PGP-ACH benchmark price is the product of the HBP, PGP Offset and Relative Case Mix. The CMS discount factor is then applied to the PGP-ACH benchmark price to obtain the PGP-ACH Target Price. HBP has the basic dollar value of the PGP-ACH benchmark price, subsequently adjusted to account for the efficiency and the case mix of the PGP relative to the hospital at which the PGP initiates the Clinical Episodes. Inclusion of the HBP in the PGP-ACH Target Price ensures the Target Price is consistent with essential feature four. The PGP Offset accounts for PGP's historical patient and peer standardized efficiency relative to the efficiency of the hospital at which it initiates Clinical Episodes. That is, after accounting for the portions of Clinical Episode spending that are explained by a PGP's patient case mix and/or by their peer group of the ACH at which the Clinical Episode is initiated, the PGP Offset represents whether the PGP has been historically more or less efficient in its Clinical Episode spending than the ACH at which its Clinical Episodes are initiated.

A less-efficient PGP will have a larger PGP Offset and thus a higher Target Price. This feature ensures that both historically high-cost providers and historically low-cost providers can obtain savings by reducing Clinical Episode spending. The Relative Case Mix accounts for whether the case mix of a PGP's Clinical Episodes at a hospital is expected to be more or less costly than the overall case mix of Clinical Episodes at that hospital. This portion is straightforward. The PGP-ACH Target Price is fundamentally based on the HBP which accounts for an ACH's case mix. The Relative Case Mix term represents an adjustment to ensure the PGP-ACH Target Price is the severity of the case mix for a Clinical Episode at that hospital. This is consistent with essential feature one.

The Target Prices we discussed in this and earlier slides are expressed in standardized dollars. To provide a quick background, we use official CMS standardization algorithm to standardize spending. The standardized payments reflect the cost of services after removing variation and spending due to geographical adjustment of reimbursement in CMS payment systems (such as the hospital wage index and geographic practice cost index in physician claims) and from policy driven adjustments (such as the indirect medical education, or IME adjustments). We'll discuss later in the presentation how these Target Prices are converted into real dollars.

The next section takes a closer look at the risk adjustment methodology in use for the Target Price construction. The methodology employs a two-stage risk adjustment model that's run individually for each of the 32 Clinical Episode categories. We first walk through estimating patient case mix adjusted spending, and then move to estimation of peer group effects. Lastly, we derive Clinical Episode spending, which compares observed Clinical Episode spending to predicted Clinical Episode spending. Once the risk adjustment stages are complete, we have all the components necessary to build Target Prices.

We begin with the first stage of the risk adjustment model. The TP step model in the title of the slide and throughout the presentation refers to the Target Price specifications document, which can be found at the Innovation Center's BPCI Advanced web page.

Risk adjustment uses the national population of Clinical Episodes. In addition to Target Price specifications discussed here, the specifications document for Clinical Episode construction can also be found at the Innovation Center's BPCI Advanced web page. The purpose of stage one is to obtain robust estimates for the correlation of patient characteristics and Clinical Episode spending to create benchmarks that will account for different levels of spending severity in the case mix of the patient population. The estimates are obtained on the national population of Clinical Episodes. This model is a mixture of two lognormal distributions and is estimated via maximum likelihood estimation. Details of this procedure are available in the appendix slide of this presentation but are not discussed today.

Risk adjustment model includes patient and peer group characteristics, quarter year indicators and their interactions with peer group characteristics. Details of this are discussed on the next slide. The patient level coefficient from this model is used for input to the PCMA Target Price. The covariates included can be divided into three broad categories: patient characteristics, peer group characteristics and quarter year indicators.

We include patient characteristics that will influence the spending complexity of the population of each provider. Peer group characteristics and quarter year indicators are included to obtain robust estimates. These non-patient characteristics coefficients are not used in the calculation of PCMA. The patient characteristics include HCCs and interactions of HCCs with other HCCs and an indicator for current disability status. These are the same set of covariates used in the community model of the CMS version 22 Part C HCC model. Specifically, there are 79 HCCs, 7 interactions of each HCC and the disability indicator, and 6 HCC interactions. In addition to the HCCs and the interactions, the count of HCCs that represent HCC severity are categorized into four buckets: No HCC, 1-3 HCCs, 4-6 HCCs and 7 or more. Patient demographics such as age, disability as the original reason for Medicare entitlement, long-term institutionalized status, and an indicator for whether the patient was dually enrolled in Medicare and Medicaid are included. Indicators for MS-DRGs and APCs of the Anchor Stay/ Anchor Procedure for the Clinical Episode are included as well. This represents a distinction from BPCI.

In BPCI, Target Prices are constructed at the MS-DRG level. In BPCI Advanced, Target Prices are constructed at the Clinical Episode category level (that is, groupings of MS-DRGs or APCs). These MS-DRG indicators adjust the Participant's Target Price to be representative of the composition of the MS-DRGs or APCs of their Clinical Episodes. This is done through updates to the PCMA term. For example, consider 2 Participants in the Major Joint Replacement of Lower Extremity category—hereafter referred to as MJRLE—comprised of 469 and 470, with 469 representing the more complex and higher cost MCC cases. Suppose Participant A has ten Clinical Episodes and all are for MS-DRG 470 while Participant B also has ten Clinical Episodes and they are split evenly between MS-DRG 469 and 470. If we assume everything about these Participants and their patient case mix are identical except for the MS-DRGs of these episodes, a larger coefficient for MS-DRG will result in Participant B having a larger PCMA term and therefore a higher Target Price to reflect greater expected spending in these Clinical Episodes.

In some instances, a Clinical Episode can start while there's another ongoing hospitalization. While Clinical Episodes initiated in BPCI Advanced cannot run concurrently in the Performance Period, a Clinical Episode may be preceded by the hospitalization for MS-DRG, that is not part of BPCI Advanced. In most cases the Clinical Episodes that are preceded by a hospitalization have higher Clinical Episode spending. To account for these overlapping inpatient admissions, the risk adjustment model includes a covariate with recent resource use. Specifically, this covariate will indicate whether there's an inpatient

stay for the same beneficiary that ends 90 days prior to the start of the Anchor Stay/Anchor Procedure. Some of the covariates are specific to a Clinical Episode category. For example, MJLRE has three additional covariates: an indicator for the presence of a fracture, an indicator for a total knee arthroplasty procedure, and an indicator for when both a fracture and TKA procedure exists for a single Clinical Episode. The fracture indicator updates Target Prices to reflect the observations involving a fracture are often more expensive than otherwise. The TKA procedure is introduced to reflect the spending differential between TKA and non-TKA Clinical Episodes. They are included in the first stage of risk adjustment.

The peer group characteristics include the following: Hospital type: There are three hospital types accounted for. These are Academic Medical Centers, also referred to as AMCs, urban but non-AMC hospitals, and rural but non-AMC hospitals. The official list of Academic Medical Centers was created by CMS along with publicly available listings from the American Association of Academic Medical Centers and input from clinicians. An indicator for safety net hospital. This is defined as the hospital's percentage of annual hospital discharges for dual-eligible beneficiaries exceeding 60%. Geographic indicator for each of the nine Census Divisions. Indicators of hospital size measured by the quantity of hospital beds, categorized into: small hospitals comprised of up to 250 beds, medium hospitals comprised of 251 to 500 beds, large hospitals comprised of 501 to 850 beds, and extra large hospitals comprised of 851 or more beds. Additionally, a series of quarter year indicators are included to flexibly account for trends in Clinical Episode spending during the baseline period. These quarter year indicators are interactive with peer group characteristics as well. While estimating the risk adjustment model, to avoid imprecise estimates, covariates that are populated for fewer than 21 Clinical Episodes within a single category are not included. These cases will be clearly indicated in the Target Price Summary workbook.

The second step in the Target Price construction ensures that hospitals with insufficient volume and their Clinical Episodes are excluded from the model and all subsequent Target Price construction steps. After running the Stage 1 risk adjustment model, the set of Clinical Episodes is limited to those hospitals that have at least 41 Clinical Episodes in the category in the baseline period. This restriction reduces substantial variation in estimating Target Prices for low volume hospitals. Hospitals that have more than 40 Clinical Episodes in a particular Clinical Episode category are considered eligible hospitals for that Clinical Episode category. There is no such restriction on PGP Participants but PGP Target Prices are constructed using HBPs, or Hospital Benchmark Prices, which are only available for hospitals meeting the Clinical Episode minimum. That is, since only those hospitals with at least 41 Clinical Episodes receive HBPs, PGP Participants will only receive a preliminary Target Price if they have Clinical Episodes initiated at an eligible hospital. Furthermore, only PGPs with more than 40 Clinical Episodes at eligible hospitals will receive PGP Offsets. For PGPs with 40 or fewer Clinical Episodes no PGP Offset will be created. In other words, their PGP Offset is assumed to be 1, indicating that their historical efficiency is equal to a particular ACH. The table in this slide provides an example of how the Clinical Episodes threshold is applied. The first three columns identify the Episode Initiators. The fourth column is relevant to a PGP Initiator to indicate at which specific ACH its Clinical Episodes are being initiated. The fifth column shows the count of Clinical Episodes in the baseline period, and the last two columns indicate whether the Episode Initiator is eligible for participation, and if so, whether they will receive preliminary Target Prices.

There are four ACH participants: BPID 1, 2, 3 and 4. Of those, only BPID3 and 4 are eligible for participation because they have more than 40 Clinical Episodes and therefore will receive preliminary Target Prices. The remaining ACH are excluded as low-volume providers. There are three PGP participants: BPID 5, 6, and 7. If you look at the “eligible for participation” column, you will see all of them have Y, meaning that they are all eligible. However, you will see that BPID 5 will not receive a preliminary Target Price because it only practices at ineligible hospitals, CCN1 and CCN2. By ineligible hospitals we mean ACHs that do not have more than 40 Clinical Episodes in the baseline period for a given Clinical Episode category. On the other hand, BPID6 practices at CCN3 and CCN4, both of which are eligible to receive preliminary Target Prices. Since BPID6 has more than 40 Clinical Episodes in total across the ACHs, the preliminary Target Price will incorporate BPID6 specific offset values. While BPID7 is also eligible to receive preliminary Target Prices, its PGP Offset will be set to one, because its total number of Clinical Episodes is fewer than 41.

Now we move to the third step of Target Price construction. In this step, a patient case mix adjusted spending amount is calculated for each baseline period Clinical Episode. This represents the portion of a Clinical Episode's spending that is explained in the patient case mix characteristics included in the risk adjustment model. To construct this amount after removing Clinical Episodes associated with low volume hospitals, apply the patient level coefficients and associated characteristic values in the expression for the expected Clinical Episode spending. Additional details are available on the appendix slides of this presentation but are not discussed here. Peer-group and quarter-year dummy characteristics are not used in the calculation of this spending amount. The resulting Clinical Episode level value is used to calculate the PCMA term for the Hospital Benchmark Price and the Relative Case Mix for the PGP-ACH benchmark price.

We now move to step four in the Target Price construction steps, which is the second stage of the risk adjustment model. In this step, we obtain estimates for the peer group characteristics. Additionally, given that the Target Prices are prospectively determined, we estimate time trends in spending for each peer group that are used to project Target Prices to the Performance Period, specifically to the third quarter of 2019 for Model Years One and Two. Intuitively, estimation of the effects of peer group characteristics on Clinical Episode spending is as follows. First, identify the portion of Clinical Episode spending that is not explained by patient case mix. Stage two of the risk adjustment model then determines what of this remaining portion is explained by the peer group characteristics and trends in spending that are associated with these peer groups. Thus, the combination of predicted spending from stage one and stage two represents the portion of Clinical Episode spending that is explained by a Participant's patient case mix and their peer group. The peer group characteristics used for each hospital are identical to those used in the stage one risk adjustment model.

To construct the PAT Factor for Target Prices for Model Years One and Two, the same form of the trend is applied for each of the 32 Clinical Episodes. Specifically, trends and Clinical Episode spending are modeled by a quadratic function in the natural log of calendar quarters. What this means in terms of covariates is the second stage risk adjustment model includes a quadratic in the natural log of the quarter time trend where quarter corresponding to the first quarter in the baseline period, 2013 Q1, takes value 1, and 2016 Q4 takes value 16. The other peer group characteristics are then interacted with the time trend variables. Finally, the output from the stage two risk adjustment model is used to the input to the PAT Factor.

In even more detail, stage two estimation is as follows: First, for each Clinical Episode, calculate a ratio of observed spending to case mix adjusted spending. This accounts for the portion of the spending that is not explained by patient case mix severity. Then take the average of this ratio at the hospital and quarter level. Next, estimate an Ordinary Least Square, or OLS, regression, of this average ratio on peer group characteristics interacted with a time trend, to identify what portion of the Clinical Episode spending is explained by peer group characteristics and trends. As previously mentioned, the time trend is modeled as a quadratic in the natural log of calendar quarters. This functional form exhibits several flexible and conservative features. Specifically, trends modeled using this functional form do not exhibit large and untenable fluctuations, either in large increases or decreases in Clinical Episode spending, that cannot be practically expected to persist.

For example, a linear trend exhibiting a decline in Clinical Episode spending, if projected out in time, will eventually lead to costs low enough that no provider would justify continuing to financially provide the service. Alternatively, a quadratic function in calendar quarters can and does lead to trends that explode to extreme positive and negative values, leading to extremely unreasonable expectations for future Clinical Episode spending. The quadratic in the natural log form generally asymptotes to a flat trend the farther in time one projects. It is stable and at the same time it allows for a flexible, non-linear evolution of Clinical Episode spending that is observed in practice. More specifically, this trend assumes that increases and decreases in spending will not persist indefinitely but will eventually level-off at finite and realistic new levels. Clinical Episode category exhibiting a decreasing trend in spending during the baseline period will not be projected to experience the same decreasing trend indefinitely but will have this trend gradually eliminated and settled at a steady new spending level.

Once estimated, calculate a predicted peer group spending adjustor for each Clinical Episode by using the new peer group coefficients and the peer group characteristics associated with a specific Clinical Episode. Additional details of this step are available in the appendix slides of this presentation.

The next two slides discuss how to estimate Clinical Episode level efficiency, which are associated with Target Prices steps five and six. The purpose of these steps is to measure historical efficiency at the Clinical Episode level, which is then used to create efficiency measure at the Episode Initiator - Clinical Episode category level. This will ensure Target Prices accurately reflect provider's historical spending. This is done by calculating the ratio of observed-to-predicted spending for each Clinical Episode. The predicted spending here is obtained from the values estimated from stages one and two of the risk adjustment model. The inputs to this step are case mix adjusted Clinical Episode spending (which is estimated from the stage one regression) and the Clinical Episode level predicted ratio (which is estimated from the stage two regression). The output of this step is used in the derivation of the Standardized Baseline Spending and the PGP Offset of the benchmark prices.

Clinical Episode level efficiency is the ratio of observed spending to predicted spending of a particular Clinical Episode. Predicted spending is calculated by multiplying the patient case mix adjusted spending with the predicted peer group spending adjustor, that is combining the predicted values from stage one and stage two. This reflects the influence of patient characteristics and provider characteristics and time trends on Clinical Episode spending as derived in the steps above. By the end of this step, for each Clinical Episode we have case-mix adjusted spending, predicted spending, and Clinical Episode level efficiency.

The next section discusses the components of the Hospital Benchmark Price and methodology for constructing it. Recall that the preliminary Hospital Benchmark Price, or HBP, incorporates three components designed to benchmark Participants against providers with similarly costly patient populations and similar hospital-level characteristics. The first component, Standardized Baseline Spending, is SBS. It accounts for a provider's efficiency in the baseline period by calculating risk and peer standardized Clinical Episode spending in the baseline period. Again, efficiency in this case refers to lower Clinical Episode spending relative to other providers with similar characteristics. The second component, the patient case mix adjusted term, also known as PCMA, accounts for varying levels of costliness and a provider's patient case mix. The final component, peer adjusted trend factor, also known as the PAT Factor, adjusts for persistent differences in Clinical Episode spending across hospital peer groups, and it trends each peer group's Clinical Episode spending to the third quarter of 2019 based on trends in Clinical Episode spending during the baseline period within each hospital and peer group.

The four inputs used to construct these three components and in turn the preliminary Hospital Benchmark Price are: Clinical Episode efficiency for the SBS, predicted Clinical Episode spending for the “dollar amount”, patient case mix adjusted Clinical Episode spending for PCMA, and parameters from the OLS regression for the PAT Factor. The inputs will be described in more detail throughout the rest of this section as will the method for producing each of the three preliminary HBP components.

In constructing the HBP, we first construct what we call the “dollar amount.” The dollar amount is the average predicted spending for all baseline period Clinical Episodes across all hospitals for a given Clinical Episode category. The dollar amount normalizes the efficiency measure and the PCMA spending measure. Specifically, it transforms the efficiency measure into dollar terms referred to as SBS or Standardized Baseline Spending and it transforms PCMA into a ratio which facilitates clear interpretation of both of these components. Note that because the dollar amount is in the numerator of SBS and the denominator of PCMA, when the two terms are multiplied, the dollar amount cancels out and has no material impact on Target Prices.

The next slide describes the ACH efficiency measure multiplied by the dollar amount to calculate SBS.

The ACH efficiency measure is calculated as the average of the observed to predicted Clinical Episode spending for each hospital during the baseline period. This metric shows by how much the ACH spending is higher or lower than predicted spending relative to peers with comparable characteristics and comparable patient populations.

In the table on this slide, we show examples of efficiency measures. If a hospital's observed spending matches its predicted spending, then the efficiency measure is one. If a hospital's observed spending is more than what is predicted after accounting for patient case mix and peer group characteristics, it will have an efficiency measure greater than one, in this case 1.1. This means that the hospital is spending more than what is expected for the patient case mix and peer group in the baseline period. Conversely, a hospital that is more efficient will have an efficiency measure less than one, in this example, 0.9. An ACH efficiency measure of 0.9 has observed spending lower than what is expected based on patient population and peer group.

SBS is the product of the dollar amount and ACH efficiency measure and will take the form of average baseline period predicted spending for a given Clinical Episode adjusted for the historical efficiency of the hospital. Therefore, SBS is interpreted as the expected spending for a hospital if that hospital has a patient population that is representative of the average during the baseline period. That is, PCMA equals one and a PAT Factor of one as well. If a provider is historically inefficient, it will have an ACH efficiency measure greater than one, which will in turn increase SBS and in turn increase the preliminary Hospital Benchmark Price. On the other hand, an historically efficient ACH will have an efficiency measure less than one resulting in a lower preliminary Hospital Benchmark Price. This ensures every Participant faces incentives to lower Clinical Episode spending that is specific to their historical performance, while also allowing savings to be achieved by out-performing their particular peer group.

The next component of the Hospital Benchmark Price is the PCMA. The preliminary case mix adjustment accounts for varying levels of historical spending that is due to a provider's patient case mix. The preliminary PCMA incorporates the dollar amount and is calculated as average case mix adjusted spending divided by the dollar amount. For example, if a provider's average case mix adjusted spending is greater than the dollar amount (that is, it is greater than the average predicted baseline spending across all hospitals for a given Clinical Episode category), this will result in a PCMA greater than one and increase the preliminary Hospital Benchmark Price. In this case, the Hospital Benchmark Price is increased specifically because of the evidence that the provider's patient population is historically associated with higher episode spending.

The PCMA as well as the Hospital Benchmark Price is referred to as preliminary here because it will be updated to account for provider's realized case mix in the Performance Period. This is done to make sure that the Target Prices accurately reflect the case mix of the patient population that is served by the provider. For example, this update ensures beneficiaries access to care by ensuring that Target Prices reflect spending differences that are influenced by observable patient characteristics. More specifically, a patient with characteristics that are historically associated with higher Clinical Episode spending will result in a higher PCMA thereby increasing the Participant's Target Price to accurately reflect the additional expenditures that the Participant incurs to provide high quality care to the beneficiary. Similarly, if a Participant treats a population in the Performance Period that is expected to have lower costs, their PCMA will be lower to reflect this. The final component of the preliminary Hospital Benchmark Price is the PAT Factor which adjusts for persistent differences in Clinical Episode spending levels across hospital peer groups and trends these peer groups Clinical Episode spending to the third quarter of 2019 based on trends and Clinical Episode spending during the baseline period that occur within each ACH and peer group.

To calculate PAT Factor, update the quarter indicator in the hospital quarter level data to the middle of Model Year Two. This will be in 2019 quarter three. Assuming that 2013 quarter one, the first quarter of the baseline period, takes value one, then the new quarter value will be 27. Also update the quarter trend by peer group interactions to reflect this new quarter value. Then apply the coefficients from the OLS regression in stage two to get the PAT Factor for each hospital in 2019 quarter three.

To recap, the preliminary Hospital Benchmark Price is calculated as the product of SBS, which is the Standardized Baseline Spending, preliminary PCMA, and the PAT Factor. And it is designed to benchmark providers against other providers with similarly costly patient populations and similar

hospital level characteristics. In this next section, we will discuss construction of PGP-ACH benchmark prices.

The purpose here is to calculate benchmark prices for each of the PGP Episode Initiators. Benchmark prices are constructed for each hospital at which a PGP's assigned Clinical Episodes are initiated. The PGP benchmark price builds off of the Hospital Benchmark Price at which its Clinical Episodes are initiated. Mathematically, the benchmark price for a PGP-ACH combination is the product of the HBP, PGP Offset and Relative Case Mix. The inputs into the PGP-ACH Target Price are the Hospital Benchmark Price, Clinical Episode efficiency, patient case mix adjusted Clinical Episode spending, and the dollar amount. The output then is the benchmark price for each PGP-ACH combination for that Clinical Episode category.

To begin to construct the PGP-ACH Target Price, first calculate the PGP efficiency measure. It's interpretation is analogous to that of the ACH efficiency measure. Specifically, it shows whether a PGP spending is higher or lower than expected after accounting for patient case mix and peer group characteristics. We calculate the PGP efficiency measure as the average of Clinical Episode efficiency across all hospitals at which the PGP initiates Clinical Episodes during the baseline period. Once the PGP efficiency measure is calculated, it's used as an input to calculate the PGP Offset. The PGP Offset is the ratio of PGP efficiency to ACH efficiency. Thus, there's a separate PGP Offset for every hospital at which a PGP's Clinical Episodes are initiated. PGP Offset measures a PGP's efficiency relative to a specific hospital at which it initiates its Clinical Episodes.

As shown in the table, if a PGP has equal efficiency as that of the hospital, its PGP Offset is one. For a PGP that is less efficient than the hospital at which its Clinical Episodes are initiated, the PGP Offset will exceed one, as is shown by the value of 1.1 in this example. Conversely, if a PGP is more efficient, its PGP Offset will be less than one. For low volume PGPs or PGPs with 40 or fewer Clinical Episodes in the baseline period, the PGP Offset will be set to one. To provide an additional incentive for historically efficient PGPs to participate, any PGP Offset less than one will be increased by half its distance from one. For example, if a PGP has an offset for a particular hospital that is 0.94, the resulting adjusted PGP Offset value is increased to the value of 0.97 which is half the distance from 0.94 to 1. As a result of this policy, historically efficient PGPs who may find additional spending reductions harder to achieve will have their Target Prices increased.

The next component of the PGP-ACH benchmark price is the Relative Case Mix. This component measures the medical complexity of the patient population that a PGP serves relative to that of the patient population of the hospital at which the episodes are initiated. To construct this, first calculate preliminary PCMA at the PGP-ACH level. Preliminary PGP-ACH is calculated as the ratio of average case mix adjusted spending for each PGP-ACH and is then divided by the dollar amount.

For the PGP which has average Clinical Episode spending greater than the baseline spending average predicted spending, the PGP-ACH PCMA will be greater than one. Next, use the PGP-ACH PCMA to calculate Relative Case Mix. Calculate preliminary case mix by dividing the newly created PGP-ACH preliminary PCMA by the already calculated ACH preliminary PCMA. That is, a Relative Case Mix value exceeding one indicates that the PGP's patient population at a specific hospital is associated with higher expected spending than is the patient population for all of the Clinical Episodes initiated at that hospital. This value is referred to as preliminary because it will be updated when each of the PCMA terms within it are updated to reflect realized patient case mix from the Performance Period.

With all the components of the PGP-ACH benchmark price calculated, construct the PGP-ACH benchmark price. It is the product of the preliminary HBP, PGP Offset and preliminary Relative Case Mix.

Next, we'll discuss how to calculate Target Prices from the benchmark prices.

In this section we will walk through the construction of the final Target Prices that will be used for reconciliation later in the model. The method is to first create the preliminary Target Price by applying the CMS discount factor to the benchmark price. This in turn is multiplied by the conversion ratio that converts the Target Price into real dollars. Since the initial preliminary Target Prices are calculated in May of 2018, Target Prices will be updated three times to reflect the fiscal year 2019, calendar year 2019, and fiscal year 2020 Medicare payment rate updates as they become available. All these preliminary Target Prices will be in real dollars.

During reconciliation, the PCMA terms of the benchmark price will be updated to reflect the realized case mix of the Clinical Episode in the Performance Period. Following this, Target Prices are recalculated to incorporate the updated PCMA components. Finally, the conversion ratio built from the Performance Period Clinical Episodes is applied to convert Target Prices into real dollars. The inputs to the final Target Prices are the preliminary hospital and PGP-ACH benchmark prices, conversion ratio, Medicare payment rate updates, and realized Performance Period case mix. The output is the final Target Prices to be used during reconciliation. The following slides are going to describe the method for calculating the final Target Price.

Once benchmark prices are created, simply apply the CMS discount factor to get the preliminary Target Price in standardized dollars. The CMS discount is 3% for Model Years One and Two. Then, apply the conversion ratio which is calculated as the sum of real dollars over the sum of standardized dollars for all of an Episode Initiator's Clinical Episodes, in a particular Clinical Episode category. By applying this ratio, preliminary Target Prices are converted from standardized dollars to real dollars. The preliminary Target Prices that the Applicants will receive in the coming weeks will incorporate up to fiscal year 2018 and calendar year 2018 Medicare payment rates, which are the latest rates available at the time of calculation. These rates are used in the setting specific price update factor to inflate the baseline period spending to Performance Period dollars.

Given that Model Years One and Two span from October 2018 to December 2019, three sets of Target Prices will be calculated to account for the different Medicare payment rates during the Model Years. There will be three updates during Model Years One and Two to adjust for fiscal year 2019 payment rates, calendar year 2019 payment rates and fiscal year 2020 payment rates as they come out. Specifically, Target Prices for Performance Period Clinical Episodes with anchor end dates in the last quarter of 2018 will incorporate calendar year 2018 and fiscal year 2019 rates. Whereas Target Prices for Performance Period Clinical Episodes which have anchor end dates between January 2019 and September 2019 will incorporate calendar year 2019 and fiscal year 2019 rates. And Target Prices for Performance Period Clinical Episodes with anchor end dates in the fourth quarter of 2019 will incorporate rates applicable for calendar year 2019 and fiscal year 2020. Thus, in general, the preliminary Target Prices are updated during Model Years One and Two to account for the most recently available Medicare payment rates. For each of these updates, the exact same set of Clinical Episodes that were used to build the preliminary Target Prices will be used to create the updated Target Prices that reflect the Medicare payment system updates.

The spending of these Clinical Episodes will be inflated using the latest available Medicare rates. Then, both risk adjustment models will be rerun under specifications identical to the preliminary Target Price run which will result in updated coefficients and updated Target Prices. These new Target Prices will be provided the Participants as soon as feasible, following publication of the applicable final rules in the federal register.

It's important to note that the first update is anticipated to occur in September of 2018, after preliminary Target Prices have been sent out and before the model goes live. As a result, the Target Prices that Participants' performance will be judged against during Model Years One and Two will be marginally different than the preliminary Target Prices received this summer. The changes in pricing however only reflect changes to the relevant prices finalized by Medicare. Again, we stress here that the only source of changes in these Target Prices will be Medicare payment system rate changes. Since, on average, rates increase during these changes, it is anticipated that these updates will on average increase Target Prices. The second update will occur in December of 2018 and the third update will occur in September of 2019.

Lastly, to convert preliminary Target Prices to final Target Prices we update the patient case mix adjusted Clinical Episode spending term to account for the realized case mix in the Performance Period and update the ratio of real dollars to standardized dollars using the realized Clinical Episodes in the Performance Period. The timelines at the bottom of this slide show how the Target Prices will be updated for both Performance Periods in Model Years One and Two. Specifically, for Performance Period one of 2019 the preliminary Target Prices are anticipated to be delivered in May of 2018, are updated in September of 2018 to account for fiscal year of 2019 payment rates then again in December of 2018 for calendar year 2019 payment rate updates. Finally, in October of 2019 final Target Prices will be constructed from the case mix from realized Clinical Episodes and updated real standardized payment ratios.

A similar process will play out for Performance Period two of 2019. The preliminary Target Prices are anticipated to be delivered in May 2018, updated in December of 2018 to account for calendar year 2019 payment rate updates, then again in September of 2019 for fiscal year 2020 payment rate updates. Finally, in April of 2020, final Target Prices will be constructed from case mix from realized Clinical Episodes and updated real to standardized payment ratios.

So now let's change gears and take a look at a sample version of the preliminary Target Price Summary workbook that Applicants will soon receive. In addition to this workbook, Applicants will receive a baseline Clinical Episode summary Excel workbook, if it checked the aggregate data field in their DRA, and a series of files that contain raw claims data for their baseline period episodes, if they checked the raw claims field in the DRA. Let's begin on the Overview tab of this workbook which can be seen by clicking on overview at the bottom of the workbook.

This workbook is an example of the preliminary Target Price workbook that a Convener Applicant will receive. Single ACH and PGP Applicants will receive similar workbooks, the only exception being single PGP Applicants and Convener Applicants with PGP Initiators will receive the data used to construct the PGP-ACH Target Prices while this data is not necessary for single ACH Applicants. All data in this workbook are fabricated and not intended to offer Applicants with rough estimates of the Target Prices they will receive later this month.

The Overview tab will contain basic information about the Applicant as well as a statement of the model's objective. This workbook employs Excel's filter and sort tools, and relevant instructions for this are also included in this Overview tab. The Overview tab will include a table of contents with descriptions for each tab in the workbook as well as hyperlinks to those tabs. The workbook will have six tabs. Let's click on definitions at the bottom of the workbook. The Definitions tab contains descriptions of all the terms and column headers throughout the document. Applicants should refer to this tab for any questions about what information is listed in a given column on a particular tab. Each key term on the Definitions tab also provides a list of the tabs where the term is referenced. Today, we skip details of the definitions as we will be closely examining the Target Price Summary and the Target Price components tab.

Let's move to the TP summary tab. The TP Summary tab shows the Applicant's baseline Clinical Episode count and Target Prices. The next tab, TP components, includes this information as well, but also provides values for the components involved in the construction of the Target Prices, (what we spent the last hour going over). Episode Initiators can be identified in this tab using the Episode Initiator BPID Column or the CCN/ TIN column.

The PGP-ACH simply provides a way for a Convener to filter their Episode Initiator's Target Prices to either PGPs or ACHs. This sample workbook provides prices for three Clinical Episode categories. By clicking on the down arrow in the Clinical Episode category you can see that these three categories are outpatient: back and neck except spinal fusion, stroke, and urinary tract infection. Please note that ACH Episode Initiators receive Target Prices for each Clinical Episode category and PGP initiators receive Target Prices for each ACH Clinical Episode category combination.

You can see by noting that initial sort order, hereafter ISO, values 1 through 6, which pertain to ACHs show only one Target Price per Clinical Episode category. Furthermore, ISO value 7 and 8 as well as 10 and 11, associated with PGP Episode Initiators, show multiple prices per Clinical Episode category. To see how the Target Prices for values 7 and 8 differ, notice the column titled "ACH CCN associated with initiating claim" differs within single PGP Clinical Episode category. This column represents the hospital for which the Target Price in this row is applicable. That is, this is the ACH in the PGP-ACH Target Price.

Now that we have the basics of what constitutes a row in this table, let's move to columns H-J. These columns provide basic standardized payment about the Episode Initiator's preliminary Target Prices. Specifically, column H indicates how many baseline period Clinical Episodes are observed for the ACH Episode Initiator or the PGP-ACH pair. This number is especially important for ACH Episode Initiators.

As we discussed earlier in this presentation, Target Prices are only constructed for hospitals with sufficient baseline Clinical Episodes. ACH must have initiated at least 41 Clinical Episodes in a given Clinical Episode category during the baseline period to receive a Target Price. See ISO 13 for an example of an ACH with insufficient Clinical Episodes. On the other hand, PGP Applicants will receive Target Prices regardless of baseline period Clinical Episode count as long as the ACH in which they initiated or plan to initiate Clinical Episodes has at least 41 Clinical Episodes in the baseline period for a given Clinical Episode category.

Note that the PGP in ISO 14 at the bottom of the table has zero Clinical Episodes in the baseline period. But the associated ACH, H1, has 459 Clinical Episodes for the stroke Clinical Episode category. Such PGPs will receive the Target Price for the associated ACH. Here you can see that the Target Prices for column J for ISOs 2 and 14 are identical.

Let's move to the TP Components tab. The TP Components tab expands on the information provided in the TP Summary tab and includes values for Target Price component such as preliminary PCMA and PAT Factor. Two things to note here: You can reference the Definitions tab if you need to refresh your memory as to the meaning of a particular column. And importantly, the order of the columns follows the Target Price steps in the Target Price specifications document available on the Innovation Center's BPCI Advanced model web page.

That is, each column references a step number that directly corresponds to the steps in the document allowing for easy reference to the Target Price specifications document for additional details. The structure of this table is intended to demonstrate the stepwise construction of the Target Prices and to separate out the components that are only used for PGP Episode Initiators. Columns K-P associated with Target Price steps 7-12 display the building blocks of the Hospital Benchmark Price. Columns Q-V are only relevant for PGPs, and ACH Episode Initiator will not receive values for these components as is evident by the blank cells for the ACH Episode Initiators in ISOs 1-6 and 13. Also note that PGP Episode Initiators with insufficient episodes in the baseline period, such as PGP P5 in ISO 14 at the bottom of the table, will not receive values for these components either because their preliminary Target Prices will be the relevant ACH's Target Price.

The three components of the HBP are displayed in steps 9-11. Multiplication of these components yields the preliminary Hospital Benchmark Price shown in step 12. The components of Standardized Baseline Spending, which are the dollar amount of the ACH efficiency measure, are shown in steps 7 and 8. The components of the preliminary PGP-ACH benchmark price are shown in step 12, 14B, and 15B. Multiplication of these three terms yields the preliminary PGP-ACH benchmark price displayed in step 16.

Here we want to say two things about the PGP Offset values shown in steps 14A and 14B. A PGP Offset will be calculated for a category across all the hospitals in which the PGP initiated episodes exceeds 40. In this sample workbook, PGP's P3 and P4 have sufficient data and thus have their own PGP Offset terms. However, PGP P5 does not receive a PGP Offset because it did not have at least 41 Clinical Episodes in the baseline period. Second, if a PGP Offset is less than one then its value is increased by half the difference from one. This adjustment is shown in step 14B, which is why 14B instead of 14A is used as a component in the preliminary PGP-ACH benchmark prices in step 16. This adjustment occurs for all of PGP P3's PGP Offsets as seen in the difference between steps 14A and 14B in ISOs 7-9.

Once we have the preliminary Hospital Benchmark Prices for ACHs and preliminary PGP-ACH benchmark prices for PGPs, we follow the steps discussed earlier in the presentation to arrive at the preliminary Target Price in standardized dollars which is displayed in steps 17 and in real 2018 dollars displayed in column Y. We emphasize that the values for Target Prices and components listed in this workbook are preliminary and that the data in this workbook will be updated three times, in September 2018, December 2018, and September 2019, respectively, to correspond with Medicare payment rate updates every calendar and fiscal year.

Now let's move to the risk adjustment parameter's tab. This and the remaining two tabs in this workbook will provide supplementary information about the inputs and outputs from the two stages of the risk adjustment model that will allow Applicants the ability to dig deeper into the construction of their Target Prices. The risk adjustment parameters tab contains parameter descriptions and estimates for all parameters used in the risk adjustment model for each Clinical Episode category. You can use the first three columns to filter to a specific type of Clinical Episode category.

For example, let's filter to the inpatient Stroke Clinical Episode category. Column D then indicates whether the parameter displayed in column H is a stage one or a stage two regression estimate. For stage one, the estimates are stratified into each of the two nodes that are estimated in the model. For example, to see the coefficients from the dually enrolled flag for the stroke Clinical Episode category filter column E to "Any\_Dual".

Here, column F shows a description of "Any\_Dual". Notice here that column G for "Any\_Dual" contains an N indicating that this variable was not dropped during estimation. If a binary flag has a positive value for fewer than 20 episodes as previously mentioned, it is not included in the risk adjustment model for that category. To easily see the set of variables that are dropped in the stroke Clinical Episode category in this sample workbook, we first need to undo the filter to "Any\_Dual" and then we filter to column G to "Y". You can see here that a single flag has been dropped. It shows up twice because it is in the first stage and there are two estimates for this single flag, one associated with each node.

Now let's move to the peer group characteristics tab. This is a simple tab that provides the peer group characteristics used to construct the PAT Factor from the latest quarter. Applicants will receive this information for all ACH Episode Initiators as well as all ACHs associated with PGP Episode Initiators. The main goal of this tab is to provide Applicants with a better understanding of the peer groups against which Episode Initiators are being compared.

Finally let's move to the patient level characteristics tab. The final tab in this workbook lists counts of the patient level covariates by Clinical Episode category. In this simple workbook, counts are included for one Episode Initiator-Clinical Episode category combination. However, Applicants will receive patient characteristics for all Episode Initiators and relevant Clinical Episode categories in their own workbooks. In short, this tab is designed to provide Applicants with a general understanding of their patient case mix. Applicants that opted to receive raw claims data for their baseline period Clinical Episodes will receive Clinical Episode level patient characteristics for their Clinical Episodes in calendar years 2014-2016 of the baseline period. However, the total count of patient characteristics included in this tab reflects the full baseline period of 2013-2016.

In this tab you see your count for a specific Episode Initiator, filter column B to a single BPID. You see that, again for simplicity here, this step is already applied to BPID 99992 for stroke. Looking at ISO1, then one can see that 314 of the total 459 baseline period Clinical Episodes for this Episode Initiator in the stroke category were associated with dually enrolled beneficiaries. Filtering in different ways in this workbook will allow you to explore the patient level characteristics for each Clinical Episode for each of an Applicant's Episode Initiator.

So this concludes today's presentation. We want to note that CMS is actively constructing Target Prices for all Applicants and is aiming to deliver them by the end of May. Thank you, and have a great rest of your week. I'll now turn it over to Leslie.

**Leslie Vasquez:**

>> Thank you so much, Kyle. If you could pass the slides to me. Great. Thanks so much. First we would just like to make everyone aware of a few additional resources available on the BPCI Advanced website. We encourage you to visit the site often. We're always updating it. First up, we have a Word document on the site entitled BPCI Advanced Target Prices specifications Model Years One and Two. This outlines the technical specification presented during today's event. We recognize that the material we presented today was highly technical, so we are working on an additional webcast geared towards physicians and administrators that will present the information in a less technical manner.

It should be available on our website in early June. Next week we'll post two new resources for physicians. A brief webcast entitled operationalizing BPCI Advanced and a short video where we compare the Medicare beneficiary experience from a fee for service perspective versus bundled payment perspective. We previously posted a medical vignette.

If you have questions about this presentation contact the BPCI Advanced team at [BPCIadvanced@CMS.HHS.GOV](mailto:BPCIadvanced@CMS.HHS.GOV). The recording from today's event will be available after 6:00 p.m. To access that recording you can use the registration link that you received when you registered. And by next week, we will post the recording on the website with the PowerPoint slides and several folks have asked about that in the chat. The slides will include the appendix and mathematical formulas we referenced today along with that Excel workbook similar to the slides that we presented today. We will also have an audio file of the event and the transcript for you.

Thank you. And I just finally want to thank our speakers and our participants for joining us today. We hope that you found the event informative. We would appreciate you giving us your candid feedback by answering a few questions. You will receive a link to a survey very shortly. Thanks again. And have a great day.

>> Thank you, presenters. And thank you for attending today. We hope you found it informative. This will conclude the program. You may now disconnect. And have a wonderful day.