Hospital Inpatient Quality Reporting (IQR) Program

Support Contractor

Fiscal Year 2019 Clinical Episode-Based Payment Measures Overview Presentation Transcript

Speaker

Cynthia Khan, PhD
Data Scientist
Econometrica, Inc.

Moderator

Bethany Wheeler-Bunch, MSHA
Hospital Value-Based Purchasing (VBP) Program Support Contract Lead
Hospital Inpatient Value, Incentives, and Quality Reporting (VIQR)
Outreach and Education Support Contractor (SC)

June 7, 2018
2 p.m. ET

Bethany Wheeler-Bunch: Hello and welcome to the Hospital Inpatient Quality Reporting Program *Fiscal Year 2019 Clinical Episode-Based Payment Measures Overview* webinar. My name is Bethany Wheeler-Bunch and I am with the Hospital Inpatient VIQR Support Contractor. Before we begin, I'd like to make our first few regular announcements. This program is being recorded. A transcript of the presentation and the questions and answers will be posted to the inpatient web site *www.QualityReportingCenter.com*. If you registered for this event, a reminder email and the slides were sent out to your email about two hours ago. If you did not receive that email, you can download the slides at the inpatient web site *www.QualityReportingCenter.com*. If you have a question as we move through the webinar, please type your question into the chat window with the slide number associated to your question. We will answer as many questions as time allows at the conclusion of the webinar. Applicable questions that are not answered during our question-and-answer session will be posted to the *QualityReportingCenter.com* website in the upcoming weeks. I would now like to welcome our speaker for today's event, Dr. Cynthia Khan. Dr. Khan is a Data Scientist at Econometrica. Dr. Khan was kind enough to join us on Tuesday providing an overview of the Fiscal Year 2019 Medicare Spending Per Beneficiary webinar. If you weren't able to attend Tuesday's Medicare Spending Per Beneficiary webinar, the recording is up on the *QualityReportingCenter.com* website for on demand playback. I hope everyone enjoys today's webinar, and I will now turn the floor over to you Dr. Khan.

Cynthia Khan: Thank you, Bethany. The purpose of this presentation is to provide an overview of the Clinical Episode-Based Payment measures and hospital-specific reports that contain data on these measures. Throughout this presentation, please note that Clinical Episode-Based Payment is abbreviated to CEBP and hospital-specific report is abbreviated as HSR. This overview includes discussion of goals of CEBP measures, measure methodology including example calculations, review of HSR elements, where to locate related supplemental information, and the measure's public reporting.

By the end of the presentation, we hope that you will be able to identify the goals of the CEBP measures; explain the CEBP measures methodology; locate CEBP documentation on *QualityNet*, including HSRs, supplementary files, and additional measures information; and know about the public posting of CEBP measures scores on *Hospital Compare*.

The CEBP measures reflect clinically coherent groupings of healthcare services that can be used to assess provider resources. Specifically, these measures assess Medicare spending for clinically related services for a condition or procedural CEBP episode. An episode is comprised of the periods immediately prior to, during, and following a patient's hospital stay for a given condition or procedure. There are six CEBP measures, three condition measures and three procedural measures. The condition measures are for cellulitis, gastrointestinal hemorrhage, and kidney/urinary tract infection. The procedural measures are for aortic aneurysm, cholecystectomy and common duct exploration, and spinal fusion.

The three condition measures and three procedural measures were selected based on the following criteria: One, they constitute a significant share of Medicare payments and potential savings during and surrounding a hospital stay; Two, they represent services that've been linked to care provided during a hospitalization; Three, they comprise a substantial proportion of payments and potential savings for post-acute care; Four, they reflect high variation in post-discharge payments which enable differentiation among hospitals; and Five, these conditions and procedures are managed by general physicians or hospitalists or by surgical subspecialists depending on the type of measure.

The CEBP measures follow the general construction of the Medicare Spending Per Beneficiary, or MSPB, measure in terms of including standardized payments for Medicare Parts A and B services, risk adjusting for individual patient characteristics, and having an episode window that is three days prior to the patient admission, also known as the Index Admission, through 30 days after hospital discharge. Both the CEBP and MSPB measures are also part of the [Hospital] Inpatient Quality Reporting Program. However, unlike the MSPB measure, CEBP measures include

only Medicare Part A and B services that are clinically related to a condition or procedure. CEBP episodes may also begin during the 30-day post-discharge window of another CEBP episode if the admission meets an episode's trigger specifications. For example, if a beneficiary had an upper GI [gastrointestinal] hemorrhage and was readmitted within 30 days after discharge for a recurrent upper GI hemorrhage, the readmission would be grouped to the first episode and would also begin a new episode. Likewise, if a beneficiary had an upper GI hemorrhage episode with a readmission for kidney/UTI [urinary tract infection] within 30 days after discharge, perhaps the potential complication of the GI hemorrhage admission, it could be grouped to the first GI hemorrhage episode and trigger a new kidney/UTI episode. Then lastly, unlike the MSBP measure, the CEBP measures are not part of the Hospital Value-Based Purchasing Program.

So, given this introduction to the CEBP measures, I will now review the goals of the CEBP measures, the measures methodology, calculation steps, and example calculation. I will next go over the hospital-specific reports and supplemental files to help everyone better understand these reports and data. Lastly, I will discuss the public posting of CEBP measures scores.

I'm going to start with the goals of these measures.

In conjunction with the [Hospital] IQR Program quality measures, the CEBP measures aim to contribute to the overall picture of provider's clinical effectiveness and efficiency and allow meaningful comparisons between providers based on resource use for certain conditions and procedures. For example, hospitals can now look to different examples of services to identify potential areas for improving efficiency through actions such as improving coordination with preadmissions in post-acute care providers to reduce the likelihood of readmission.

Next, I will provide a description of the measure methodology and define some key terms.

The presence of specific medical codes on claims triggers and index admission for CEBP episodes. CEBP measures are classified in episode types and clinical subtypes. Episode types are defined by the presence of complications or comorbidity, an example of which is major complications or comorbidities, abbreviated as MCC, on a triggering inpatient hospitalization. Clinical subtypes are defined by the presence of [International Classification of Diseases] ICD-10 diagnosis codes, or condition episodes, or Current Procedural Terminology® (CPT ®), or procedural episodes, during hospitalization and/or on the physician Part B claims associated with the triggering inpatient hospitalization.

A division of measures into a type and subtype allows for a more accurate comparison of observed to accepted costs for beneficiaries with a similar clinical picture. For example, a cellulitis episode could have an episode type of cellulitis with major complications or comorbidities or cellulitis without major complications and comorbidities. These episode types may further be broken down into clinical subtypes, which could include cellulitis as a complication of diabetes, cellulitis as a complication of decubitus pressure ulcers, or cellulitis in all other patients.

As we talk about CEBP episodes, it is important to note that not all hospital admissions qualify as index admissions. Hospital admissions that are not considered a CEBP index admission occur when admissions have discharge dates that are fewer than 30 days prior to the end of the yearly performance period, which is December 31st; when there are transfers between acute care hospitals; when admissions occur to hospitals that Medicare does not reimburse through the inpatient prospective payment system (or IPPS), for example, cancer hospitals or critical access hospitals; when claims have data coding errors, including missing date of birth or death dates that proceed the index admission' and when the index admission claim has zero dollar payment.

Clinically related services are grouped to an episode by applying grouping rules. Grouping rules identify and aggregate clinically related services by two categories of medical care, treatment services that encompass the medical care occurring during the hospital stay and clinically related

services beginning three days prior to hospital stay, while clinically-related post-discharge services include routine follow-up as well as services after discharge that are linked to the occurrence of adverse outcomes fully or partially attributed to care while in the hospital.

A CEBP measure score is the CEBP amount divided by the national episode-weighted median CEBP amount for a given measure. The CEBP amount is the average ratio of each episode's standardized episode payment amount over its expected episode payment [amount], multiplied by the national average observed episode payment amount.

CEBP measures that are less than one indicate that a given hospital spends less than the national episode-weighted median CEBP amount during a given performance period. Relative improvement on CEBP measures for a hospital would be observed as lower CEBP measures values across performance periods. Now, we do want to take a moment to point out that CEBP measures scores alone do not necessarily reflect the quality of care provided by hospitals. Resource use measures, such as the six CEBP measures, are most meaningful when present in the context of other quality measures to provide a more comprehensive assessment of hospital performance.

Now that we have gone over CEBP key terms and how to interpret the CEBP measures, this slide will discuss what populations are included and excluded when calculating a hospital CEBP measure. Beneficiaries included are those who are enrolled in Medicare Parts A and B from 90 days prior to episode through the end of episode and those who are admitted to subsection (d) hospitals. Beneficiaries that are excluded are those enrolled in Medicare Advantage during the episode, those who have Medicare as a secondary payer prior to episode through the end of the episode, or those who died during the episode.

The next part of this presentation will focus on the steps to calculate each CEBP measure.

There are eight steps we'll walk through over the next set of slides. The first step is to standardize claims payments so that spending can be compared across the country. The second step is to calculate the standardized episode spending for all episodes of a given admission or procedure in a hospital. The third step is to estimate the predicted episode spending using linear regression. Step four, all extreme values reduced in step three are winsorized, or bottom coded. The fifth step is to calculate the residuals for each episode from step three so that we can identify outlier payment. Then, in step six, the outlier payments are excluded. In step seven, we calculate the hospital-level risk-adjusted payments, which is the CEBP amount for each hospital. Finally, in step eight, we calculate the CEBP measure for a hospital based on the CEBP amount.

In the first step, claims payments are standardized to adjust for geographic differences and payments from special Medicare programs that are not related to resources, such as hospital's graduate medical education fund for training residents. However, payment standardization maintains differences that result from healthcare delivery choices, such as a setting where the service is provided, type of a provider, for example, a nurse practitioner versus a physician, the number of services provided in the same visit, and outlier cases. For more information about the full methodology that's used to calculate the standardized payment, you can refer to the CMS Price (Payment) Standardization documents on the *QualityNet* web page listed on this slide.

In the second step, all standardized Medicare Part A and Part B claim payments for clinically related services are summed within a CEBP episode. This includes patient deductibles and coinsurance claims that are grouped based on the "from date" variable. The inclusion of claims based on the "from date" variable is based on the first day of the billing statement covering services rendered to the beneficiary. Inpatient claims are based on admission date. Now, we often get questions about post-acute care services that extend beyond 30 days after hospital discharge. All post-acute care services that have a claim "from date" within the 30-day post-hospital discharge period will be included if clinically related to the

episode in question. For example, if a patient is admitted to an eligible hospital which triggers a CEBP episode, and then this patient receives clinically related home health services beginning within the 30-day post-discharge period of the episode, the CEBP episode amount will include those home health services even if the duration extends beyond the 30-days post-discharge period. The CEBP measure calculation does not prorate spending.

The third step is to calculate the expected episode spending amounts. In this step, the episode spending amount is adjusted for age and severity of illness. Specifically, to account for variation in patient clinical complexity, a linear regression is used to estimate the relationship between the risk-adjustment variables and the standardized episode cost calculated in step two. Risk-adjusted variables include factors such as age, severity of illness, clinical subtype, disabled or end state renal disease, or ESRD, enrollment status, long-term care, comorbidity interactions, and the Medicare Severity-Diagnosis-Related Group, or MS-DRG, of the index admission. Severity of illness is measured using a number of indicators including Hierarchical Condition Categories, or HCC, indicators. HCC indicators are specified in the HCC Version 22 model which accounts for the inclusion of ICD-10 codes by mapping ICD-9 codes to condition categories and ICD-10 codes to condition categories. Initial independent variables are included depending on the type of condition or procedural measure. Separate regression models are run for each clinical subtype. More details about these linear regressions can be found on the *QualityNet* web page listed on this slide.

In the regression model, step three, a large number of variables are included to more accurately capture patient clinical complexity, but a risk of using a large number of variables is that the regression can reduce some extreme predicted values due to having only a few outlier episodes in a given cell. So, in the fourth step, extremely low values for expected episode spending are winsorized, or bottom coded. So, each clinical subtype episodes that fall below the 0.5 percentile of the episode expected cost distribution are identified. Next, the expected spending of these

extremely low-spending episodes is set to the 0.5 percentile threshold. Lastly, the expected spending scores are renormalized to ensure that the average expected spending level for an episode based on clinical subtype is the same before and after winsorizing. This renormalization is done by multiplying the winsorized expected spending by the ratio of the average expected standardized spending level within each clinical subtype and average winsorized predicted spending level within each clinical subtype.

In the fifth step, we calculate the residual for each episode's identified outliers. The residual is calculated as the difference between the standardized episode spending, which was calculated in step two, and the winsorized expected episode spending, which was calculated in step four. In the sixth step, the statistical outlier episodes based on outlier clinical subtypes are identified and are then excluded to mitigate the effect of high spending and low spending outliers for a given CEBP measure. High spending outliers are identified when the residuals fall above the 99th percentile of the residual distribution. Low spending outliers are identified when residuals fall below the first percentile. The last part of step six also renormalizes the expected spending of an episode to ensure that the average expected spending is the same as the average standardized spending after outlier exclusions within a clinical subtype.

In the seventh step, the risk-adjusted CEBP amount is calculated as an average ratio of a hospital's standardized payments from step two to its renormalized expected payments from step six across a hospital's CEBP episodes. This average ratio is then multiplied by the national average CEBP condition or procedure spending level across all hospitals to convert this ratio to a dollar amount.

In the eighth step, the CEBP measure for a given condition or procedure is then calculated as a ratio of the risk-adjusted CEBP amount for the hospital as calculated in step seven and the national episode-weighted median CEBP amount for that condition or procedure.

The CEBP measures for Inpatient Quality Reporting, or IQR, at eligible hospitals are publicly posted on *Hospital Compare* where hospitals have at

least 40 condition episodes or 25 procedural episodes. Hospitals with fewer than 40 condition episodes or 25 procedural episodes will not have their respective CEBP measures publicly reported on *Hospital Compare*.

Now that we've gone over each of the steps to calculate the CEBP measures, the next set of slides will walk through the calculation of the cellulitis CEBP measure for an example hospital, and we'll be using cellulitis as an example throughout the presentation.

We previously described how condition and procedural measures have different episode types and clinical subtypes. However, the different CEBP measures follow the same calculations, and so to illustrate how CEBP measures are calculated, we will use the example of the CEBP cellulitis measure. The episode types for cellulitis include cellulitis with major complications or comorbidities, which will we abbreviate as MCC, cellulitis, and cellulitis without MCCs. Clinical subtypes within each episode type include cellulitis as a complication of diabetes, cellulitis as a complication of decubitus pressure ulcers, and cellulitis other, which is reflected by the absence of an ICD-10 diagnosis code for diabetes or decubitus pressure ulcers.

In this example, hospital A has seven cellulitis episodes ranging from $8,000 to $11,000 in standardized episode spending. After applying steps one through four of the calculations, we see that the hospital has one episode with the residual higher than the 99th percentile which was excluded in step six. As a reminder, the residual is calculated as the difference between standardized episode spending from step two and the winsorized expected episode spending from step four, which in this example was $500. This episode, which has a residual higher than the 99th percentile, is then excluded in step six. The CEBP amount and the CEBP measure will then be calculated based on the remaining six episodes for hospital A.

In step seven, the CEBP amount for hospital A is calculated as the average of the ratios of each episode's standardized episode payment to its renormalized expected payment. Next, this average ratio is multiplied by

the average standardized episode spending across all hospitals to convert the CEBP amount to a dollar amount. In this particular example for hospital A, the average of the ratios is 0.899. If the average standardized episode cost for cellulitis across hospitals is $9,260.25, then multiplying it to the average ratio for a given hospital yields a CEBP amount of $8,324.96 for hospital A. In the next slide, we are going to walk through a calculation of the CEBP cellulitis amount for hospital A.

Recall that after removing one outlier in step six, hospital A has six cellulitis episodes for calculating the CEBP cellulitis measure. To simplify this example, each cellulitis episode is either with or without a major complication or comorbidity, shown in either a gold or a light blue box, and either a complication of diabetes or a decubitus pressure ulcer. Each episode has a standardized payment and an expected payment, depending on whether it is with a major complication or comorbidity, again shown as either gold or light blue, and whether it is a complication of diabetes or a decubitus pressure ulcer. For example, episode one is a cellulitis episode without an MCC and is a complication of diabetes. Its standardized payment is $8,400, and its expected risk-adjusted payment is $8,569. Dividing the standardized payment by the expected payment for episode one yields a ratio of 0.981, shown in red. To calculate the cellulitis CEBP amount across these six episodes, we add the ratios of standardized to expected payments across episodes. This gives us a total ratio of 5.393. We then obtain the average ratio by dividing the total ratio, that is 5.393, by the number of episodes obtained at step six, for an average ratio of 0.899, shown in blue. Now, let’s say that the national average standardized cellulitis episode spending is $9,260.25. To obtain the dollar amount for the CEBP cellulitis amount in hospital A, we multiply the average ratio of standardized payments, that is 0.899, by the national average standardized episode amount of $9.260.25 to obtain the cellulitis CEBP amount of $8.324.96.

Finally, in step eight, the cellulitis CEBP measure for hospital A is calculated as the ratio of the CEBP amount, which we calculated in the previous slide, divided by the national episode-weighted median CEBP

amount for cellulitis across hospitals, and let's say that the national episode-weighted median amount for cellulitis is $9,382.23. Dividing the CEBP cellulitis amount [of] $8,324.96 by the $9,382.23 yields a cellulitis CEBP measure of 0.89 for hospital A. This example shows hospital A's spending on cellulitis was lower than the national median hospital spending on cellulitis, and, if we consider public posting of the CEBP cellulitis measure, the measure for hospital A will not be publicly posted to *Hospital Compare* because hospital A had fewer than 40 eligible cellulitis episodes.

In the next section of this presentation, I will provide an overview of the CEBP hospital-specific reports and the supplemental files that hospitals receive.

The CEBP hospital-specific reports, abbreviated as HSRs, include 12 tables, six tables for CEBP condition measures and six tables for CEBP procedural measures. The tables include CEBP measures for the individual hospital as well as results for hospitals in the state and in the nation. HSRs are accompanied by three supplemental hospital-specific data files that contain information on the hospital admissions that were considered for the individual hospital's CEBP measures as well as other data on Medicare payments to individual hospitals and other providers that were included in the calculation of CEBP measures.

This is an illustration of how condition and procedural CEBP measures are displayed in the HSR. The condition and procedural measures values are displayed in separate tables. For example, the condition measures are displayed in Table 1A, while the procedural measures are displayed in Table 1B and so forth. The national distribution of condition measures is displayed in Figure 1A, while the national distribution of procedural measures is displayed in Figure 1B. For illustrative purposes, the remainder of the presentation will showcase table content for CEBP condition measures which parallel the table contents of the CEBP procedural measures. Please note that the data we show over the next several slides are for illustrative purposes only and do not reflect actual data.

Tables 1A and 1B of the HSR display the hospital's CEBP measures by condition and procedural measures respectively. In this example, Table 1A shows the hospital's individual CEBP measures by condition.

Tables 2A and 2B display the number of eligible admissions, CEBP amount, a hospital's average, state average, and U.S. national average CEBP amount for each of the condition and procedural measures respectively. In this example, Table 2A displays data for a hospital's CEBP condition measures.

Tables 3A and 3B display the major components used to calculate a hospital CEBP measure for each condition or procedural measure and include data such as the number of eligible admissions, CEBP amount, and the episode with the national median CEBP amount for each condition or measure respectively. So, for the sake of space, we're only presenting the top half of Table 3A for the CEBP condition measures, but this table will also include information on the GI hemorrhage and kidney/UTI measure.

Tables 4A and 4B display the national distributions of the CEBP condition and CEBP procedural measures respectively across all hospitals in the nation, and Figures 1A and 1B show distributions in graphical form. In this example, Table 1A and Figure 1A display data for CEBP condition measures.

Tables 5A and 5B provide a detailed breakdown of a given hospital's spending by category of medical care in terms of when in the episode the clinically related services are grouped for each condition. Tables 5A and 5B provide the average actual standardized episode's spending amounts. It is important to note that these average spending amounts are not risk-adjusted for patient clinical complexity because risk adjustment is performed at the clinical subtype level. In this example, Table 5A includes all three condition measures, but, for the sake of space, we are only showing the top of Table 5A that displays information for cellulitis. Spending levels are broken down by claim type within treatment services and clinically-related post-discharge services. Hospitals can compare the percent of total average of spending by claim type and grouping period to the total average spending in hospitals in their state and in the nation.

To continue with this Table 5A excerpt, this hospital has an average claim service payment spending amount of $129.91 on inpatient services for the clinically related post-discharge services. This is 2% of episode spending for the hospital for clinically-related post-discharge services. Looking at the same excerpts of Table 5A, we can also compare the percent of total average spending in the hospital to that of the percent spending at the state and national levels. The red box highlights the comparison we can make for the percent of spending in inpatient services during the clinically-related post-discharge services. A higher percent of spending in the hospital than the percent of spending in the state or in the nation means that, for a clinical visit within a grouping period and claim type, this hospital spent more than the other hospitals in the state and in the nation respectively.

Tables 6A and 6B provide a breakdown of average price-standardized and respective spending for a CEBP episode by clinical subtype for each condition and procedure respectively. Using the information from Tables 6A and 6B, hospitals can compare their average actual spending, that is the sum of standardized payments, to the expected spending, which is the risk-adjusted spending, to the state and national average actual and expected spending by clinical subtype, and, for our example in Table 6A, Table 6A normally lists information for all three conditions, but we will only be displaying the top part of the table on the following slide.

In this excerpt of Table 6A, we have highlighted spending for cellulitis as a complication of diabetes with and without other major complications and comorbidities to view differences in average price-standardized spending per episode and an average expected spending per episode.

As illustrated in the same excerpt of Table 6A, hospitals can use column C through F to compare their spending level to the spending level in the state and in the nation. For example, if the individual hospital has a lower value in column B than in column F, its patients have a lower spending level than the nation for that clinical episode by clinical subtype.

In addition to receiving a CEBP HSR, each hospital receives three supplemental hospital-specific data files. There is the Index Admission

File, a Beneficiary Risk Score File, and a CEBP Episode File. The Index Admission File has inpatient admissions for your hospital in which a beneficiary was discharged during the period of performance, which for this year's report would be based on Calendar Year 2017 data. The Beneficiary Risk Score File identifies beneficiaries and their health status based on the beneficiary's claims history in the 90 days prior to discharge of an episode. This file also includes the data that was used in the risk-adjustment regression model. The [CEBP] Episode File has the type of care and the spending amount for the top five billing providers in each care setting for each CEBP episode at your hospital.

Hospitals may preview their CEBP measures for 30 days after the release of the HSR. Data are posted to *Hospital Compare* after the conclusion of the Preview Report. During the Preview Report, hospitals may submit questions or requests for correction to cmscebpmeasures@econometricainc.com which is listed on this slide. When submitting questions or requests, please include your hospital's CMS Certification Number, or CCN. As with other claims-based measures, hospitals may not submit additional corrections to underlying claims data or new claims to be added to the calculation.

In this last section, I will discuss public reporting of CEBP measure scores.

The CEBP measures will become part of the [Hospital] IQR Program measure set starting Fiscal Year 2019. In August 2017, the CEBP condition measures were reported in the HSRs for informational purposes only, and neither the condition or procedural measures were publicly reported on *Hospital Compare*. However, beginning in 2018, the CEBP condition and procedural measures are provided in an HSR in May and publicly posted on *Hospital Compare*.

Hospitals may submit questions about CEBP calculations or their HSR at cmscebpmeasures@econometricainc.com. For report re-upload requests and calculation questions, please include your hospital's CMS Certification Number, or CCN, so that we can easily analyze your hospital's questions against the data we sent, and again, as with any other claims-based measures, hospitals may not submit additional corrections to

underlying claims data and they may not submit new claims to be added to the calculations. Additional information about CEBP measures, including more detailed measure specification documentation and grouping rules, documentation FAQs [Frequently Asked Questions], mock HSRs, and a description of data files for HSRs can be found on the *QualityNet* web site listed on this slide.

Over this call, we went through quite a bit including goals of the CEBP measures, steps involved in calculating the CEBP measures, HSRs, the files that are available online, and measure scores that are publicly reported. I hope you find this presentation helpful to better understand the CEBP measures, and I will now pass the presentation back to the organizers of this webinar to discuss the continuing education [CE] approval process and to go over any questions that you may have.

Bethany Wheeler-Bunch: Thank you, Dr. Khan, for your presentation. As a reminder to participants submitting questions into the chat window, please include the slide number associated with your question. We received many good questions today, so let's jump right in. Dr. Khan, which reporting program is the CEBP under?

Cynthia Khan: The CEBP measures become part of the [Hospital] Inpatient Quality Reporting Program measure set starting Fiscal Year 2019.

Bethany Wheeler-Bunch: Do hospitals that are currently in the [Hospital] IQR Program have to submit these measures?

Cynthia Khan: No. Hospitals do not submit CEBP measures because these measures are based on Medicare claims data.

Bethany Wheeler-Bunch: Do we want our CEBP measures scores to be as close to one as possible, or is it better to be well below one?

Cynthia Khan: A CEBP measure of greater than one indicates that your hospital's CEBP amount for a given condition or procedure is more expensive than the U.S.

national episode-weighted median CEBP amount for that condition or procedure. A CEBP measure of less than a one indicates that your hospital's CEBP amount is less expensive than the U.S. national episode-weighted median CEBP amount. Please note that resource use measures such as CEBP measures are most meaningful when presented in the context of other quality measures to provide a more comprehensive assessment of hospital performance.

Bethany Wheeler-Bunch: Thank you. Our next question: In the CEBP spending breakdown under the clinically related post-discharge services, what does the inpatient category cover?

Cynthia Khan: This category covers any inpatient claims that occur in the post-discharge period, and this could be inpatient readmissions that are clinically related according to the grouping processes detailed in the CEBP measures specifications. The clinically-related determination could be made based on just the Diagnosis-Related Group, or the DRG, or in cases where clinical experts felt that the DRG by itself wasn't sufficient; It could be based on the DRG in combination with a particular diagnosis. The inpatient admissions could be a wide array of possibilities depending on the grouping rules for the specific clinical episode. More information about the CEBP measures grouping rules can be found on the *QualityNet* web pages pertaining to episode-based payment measures. More information on inpatient services can be found at *www.resdac.org*.

Bethany Wheeler-Bunch: Thank you. Which claims are included in the carrier category?

Cynthia Khan: The carrier file, also known as the physician or supplier Part B claims file, contains file action fee-for-service [FFS] claims submitted on a CMS 1500 Claim Form. Most of the claims are from non-institutional providers such as physicians, physician assistants, clinical social workers, and nurse practitioners. Claims for other providers such as free-standing facilities are also found in the carrier file. Examples include independent clinical laboratories, ambulance providers, and free-standing ambulatory

surgical centers. More information on carrier category can be found at *www.resdac.org*.

Bethany Wheeler-Bunch: Thank you. The next question: Since claims are based on a DRG, how do the measure developers determine what care during the inpatient admission is considered unrelated to a condition?

Cynthia Khan: So, at a high level, services are categorized depending on when they occur. That is as part of treatment services or as part of clinically-related post-discharge services. Treatment services are for the initial treatment of the condition. Treatment services include services during an inpatient's stay as well as pre-trigger services such as diagnostics related to the inpatient stay. Clinically-related post-discharge services are services that could include routine follow-up care after discharge. Clinically-related post-discharge services could also include complications such as those manifested through readmissions to inpatient facilities.

Treatment services all across Part A claims during an inpatient stay are included in the measure. Treatment services also include the standardized allow payments for Part B physician supplier claims during the inpatient stay. For pre-trigger services and clinically-related post-discharge services, our clinicians and externally-contracted clinicians have done an extensive review of services that occur in these time periods in order to determine clinical relatedness and un-relatedness.

To complete the review, the measure developers gather clinicians with expertise in the given areas. For example, we use gastroenterologists and colorectal experts for the GI hemorrhage episode. For the kidney/urinary tract infection, or UTI episodes, we had general medical and surgical practitioners and nephrologists. For cellulitis we had general practitioners and medical and surgical specialties. We constructed these episodes and brought up the services occurring during episodes along with a diagnosis in front of the clinical experts. The clinical experts review the services and make determinations according to a series of rules that are spelled out in detail in the measures methodology document in *QualityNet* for whether

those services are likely to be clinically related and influenced by the hospital to determine the trigger admission and attributed to the measure. The clinicians then review these services and determine whether services were clinically related. The clinicians count only the standardized allowed amounts associated with the related admissions that are represented in clinically-related post-discharge services and pre-trigger services in the total spending amount. For more information about the determination of clinically related services and also information about grouping rules, you can refer to the measures methodology web page in *QualityNet* for the episode-based spending measures.

Bethany Wheeler-Bunch: For acute to acute transfers, are the patients excluded from the receiving hospital as well from the sending hospital?

Cynthia Khan: Yes. If there is an acute-to acute transfer, the episode would not trigger an episode for the purposes of the CEBP measures. So, neither the receiving hospital nor the sending hospital is assigned an episode for the CEBP measures in that case.

Bethany Wheeler-Bunch: Are CEBPs defined by MS-DRGs?

Cynthia Khan: CEBP episodes may be defined by the Medicare Severity, MS-DRGs, the International Classification of Diseases (ICD-10), and/or the Current Procedure Terminology, or CPT codes. We suggest that you refer to the documentation in *QualityNet* for the episode-based payment measures under Measures Methodology. You'll find there are specific codes for condition and procedural measures.

Bethany Wheeler-Bunch: Why are Medicare Advantage patients excluded?

Cynthia Khan: The exclusion of Medicare Advantage patients from the measures is due to a data limitation. The measure excludes beneficiaries enrolled in Medicare Advantage during an episode to ensure that a complete picture of resources can be accounted for through the duration of an episode. The system of validating encounter data differs between services under the

Medicare Advantage and services under the fee-for-service system. Such differences make it difficult to compare claims data across patients who are and the patients who are not enrolled in Medicare Advantage.

Bethany Wheeler-Bunch: Why is the hospital's CEBP amount for each condition or procedural measure divided by the national median CEBP for that condition or procedure and not the national average CEBP for that condition or procedure?

Cynthia Khan: So, the median score presents the score that falls in the middle of the distribution score going from the lowest score to the highest score, and the median is less influenced by scores in the high end to the low end of the distribution than is the average, and so, we use the median score as the denominator.

Bethany Wheeler-Bunch: Can you explain what is meant by price-standardized payment?

Cynthia Khan: Price standardization accounts for payment differences in geographic locations and special Medicare payments, or programs rather, unrelated to care, for example, graduate medical education and payments, while retaining other aspects of the Medicare payments. You can find more information about price standardization by referring to the CEBP Measures Information Form that's located in the *QualityNet* Measure Methodology reports section of the Episode-Based Payment Measures section in *QualityNet*, and I should say that this web page also provides the actual documentation described in payment standardization.

Bethany Wheeler-Bunch: Thank you. Can you explain what is meant by risk adjustment?

Cynthia Khan: The risk adjustment model includes independent variables for age, severity of illness, and enrollment status. Specifically, the methodology includes age categorical variables, hierarchical condition [or HCC variables] derived from the beneficiary's claim during the period 90 days prior to the start of that episode, as well as MS-DRG of the index hospital admission.

The risk adjustment methodology also includes the HCC interaction variables, status indicator, variables whether the beneficiary qualifies for Medicare through disability or End Stage Renal Disease, and whether a beneficiary resides in a long-term care facility. The risk adjustment approach estimates them all separately for episodes within each clinical subtype, and this allows the impact of the risk adjusted variables on predicted spending to differ for the various subtypes. Risk adjustment is a critical element of a valid measure because it removes sources of variation in episode payments that are out of the control of the hospital that was attributed the episode. In fact, more information about the risk adjustment model for a CEBP measure can be found in the CEBP Measures Information Form which is located in the *QualityNet* Measure Methodology reports for the Episode-Based Payment Measures.

Bethany Wheeler-Bunch: Thank you. Next question: Does the methodology for calculating the CEBP measures consider all conditions clinically related to any diagnosis present on admission or only the primary diagnosis?

Cynthia Khan: In assigning clinically related services, the clinical experts are examining the attributed hospital's inpatient stay and trying to determine what services are reasonably under the influence or affected by the attributed hospital's treatment during the inpatient stay. If there are conditions that have comorbidities present on admission and those conditions are not directly a part of the inpatient stay and are not necessarily under the influence of the hospital, they would not be used to assign clinically related services in the pre-trigger post-discharge period. This is to ensure that the episode spending does not include services that are a part of comorbidities that the hospital is not accountable for in providing treatment for the specific Diagnosis-Related Group, or DRG, but focuses on grouping services to episodes that are clinically related to the specific DRG and episode type that we're looking at in the measure. At the same time, the comorbidities will be accounted for in the risk adjustment to the extent that they are present in the patient during the 90-day lookback period from the start of the CEBP episode. If these comorbidities are present in the 90-day lookback period,

they are included in the risk adjustment model to ensure that hospitals are not penalized for complex patients.

Bethany Wheeler-Bunch: Thank you. If my HSR for cellulitis with diabetes has no data, does that mean that we had no cellulitis patients with a diabetes code?

Cynthia Khan: So, that is partially correct. Your hospital may not have had any episodes at that subtype. However, it is important to keep in mind that the exclusion criteria discussed in the presentation has been applied. So, for instance, if you had one Medicare Advantage patient with cellulitis with a diabetes code, that patient and their episode would not be included in the measure, as such that HSR for cellulitis as a complication of diabetes would not have any data reported. So, more information about the measure exclusion criteria can also be included in the methodology documents in the *QualityNet* and under the Episode-Based Payment Measures.

Bethany Wheeler-Bunch: To clarify, if a case has the subtype ICD-10 code but not a DRG for cellulitis, is this considered a trigger event? If so, is this is a primary or secondary ICD-10 diagnosis code?

Cynthia Khan: So, no. The subtype ICD-10 codes would not be sufficient to trigger a CEBP episode for cellulitis. These codes would need to occur with a trigger MS-DRG listed in the methodological documentation. All CEBP episodes are triggered by an MS-DRG found on an inpatient claim.

In addition, there are identification of clinical subtypes that can happen through the presence of ICD-10 diagnosis codes or through the presence of the current procedure terminology, or CPT, procedure codes, and it is also possible for the procedural episodes to have complementary trigger rules that depend on the CPT codes on Part B claims.

Bethany Wheeler-Bunch: Why don’t some hospitals receive hospital-specific reports for CEBP measures?

Cynthia Khan: Hospitals that Medicare does not reimburse through IPPS, the inpatient prospective payment system (for example, cancer hospitals, critical access hospitals, hospitals in Maryland) are not eligible to begin CEBP episodes and, therefore, do not receive HSRs. Moreover, an eligible provider must have at least one eligible CEBP episode for any of the CEBP measures to be provided a CEBP HSR. For more information about inclusion/exclusions from CEBP measures, you can refer to the measure specification document in *QualityNet* for the Episode-Based Payment Measures.

Bethany Wheeler-Bunch: That's all the time we have for questions today. If your question was not answered or if you would like to review all of the questions and answers covered today, please go to the *QualityReportingCenter.com* web site in the upcoming weeks to find the question-and answer-transcript. If you have any immediate questions that you would like addressed, please contact Econometrica directly at cmscebpmeasures@econometricainc.com. That email address is displayed on slide 54.

Thank you for joining today, and I will now turn the webinar over to Dr. Deborah Price for instructions on receiving continuing education credit and closing remarks. Thank you and have a great day.

Deborah Price: Thank you. This event has been approved for one continuing education credit. You must report your own credit to your respective boards. Complete the survey and then register for your certificate. Registration is automatic and instantaneous. Therefore, if you do not get a response right away, there is a firewall blocking your link. You will need to register as a New User using your personal email and phone number.

If you are a New User or have had any problems getting your credit, use the New User link. If you have not had any issues getting your credits, use the Existing User link.

Thank you for joining us today. We hope you learned something. All questions will be answered and posted on our *QualityReportingCenter.com* web site at a later date. Enjoy the rest of your day. Goodbye.