



**Hospital Value-Based Purchasing (VBP) Program**  
**Inpatient Value, Incentives, and Quality Reporting (VIQR)**  
**Outreach and Education Support Contractor**

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**Reviewing Your FY 2024 Hospital VBP Program**  
**Mortality and Complication Measures HSR**  
**Presentation Transcript**

**Speakers**

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**Moderator**

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**Brandi Bryant:** Hello and thank you for tuning into the *Reviewing your Hospital VBP Program Mortality and Complication Measures Hospital-Specific Report* webinar. My name is Brandi Bryant, and I will be your host for the webinar.

I would like to welcome our speakers for this webinar. Maria Gugliuzza is the Hospital Value-Based Purchasing Program Lead at CMS's Inpatient Value, Incentives, and Quality Reporting Outreach and Education Support Contractor. Kristina Burkholder is the Measure Implementation and Stakeholder Communication Lead at CMS's Hospital Outcome Measure Development, Reevaluation, and Implementation Contractor. Angie Drake is with the Hospital Quality Reporting Analytics Team.

The purpose of this event is to provide an overview of the Hospital-Specific Reports, or HSRs, for the mortality and complication measures used in the fiscal year 2024 Hospital VBP Program. This includes measure methodology, measure calculations, HSR access, and instructions for submitting a review and correction request.

At the conclusion of the webinar, you should be able to recall the updates to the fiscal year 2024 Hospital VBP Program mortality and complication measure HSR, access and review the HSR, and submit a review and correction request, if desired.

This slide displays a list of acronyms that will be referenced during the webinar. That concludes my introductions. I will now turn the webinar over to our first speaker. Maria, the floor is yours.

**Maria Gugliuzza:** Thank you, Brandi. My name is Maria Gugliuzza, and I'll be covering topics such as the measures included in the HSRs; the measurement periods associated with those measures, including the impact due to the COVID-19 exception; other HSRs that are on the horizon; and how to access the HSRs.

The purpose of the Hospital VBP Program mortality and complication measures HSR is to provide the underlying claims data that were used to calculate the measure results.

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Using this data, hospitals may review and request corrections to the calculations of the performance period measure rate results prior to those rates being used to calculate a hospital's Total Performance Score.

The performance periods for each of the five measures are listed on this slide. On the next slide, I'll discuss why updated discharge periods end on December 1 and October 2.

CMS announced that they would not be using claims reflecting services provided in Quarter 1 or Quarter 2 of 2020; those date ranges being January 1, 2020, through June 30, 2020. Both Quarter 1 and Quarter 2 of 2020 were part of the five mortality measure calculations and Quarter 1 was part of the hip-knee complication measurement period initially. Further, CMS is restricting the discharge periods to end on December 1, 2019, for the five mortality measures because the measures identify deaths within 30 days of each index stay and to end on October 2, 2019, for the hip-knee complication measure because the complication measures identify complications within 90 days of each index stay. The 30- and 90-day periods from December 1 and October 2, respectively, would end on December 31, 2019, and would not include any data or events from Quarter 1 or Quarter 2. Please note that hospitals do not need to request anything to have this exception applied. The updated discharge period has already been applied to all hospital calculations that are included in the HSR.

The Hospital VBP Program HSRs were delivered April 13. Following the 30 days after the delivery of the HSRs, you have the opportunity to review the HSR and request a calculation correction. All review and correction requests must be submitted by May 15. Angie will provide instructions and more details regarding the review and correction process later in the presentation.

In these HSRs, only performance period data will be included. If your hospital would like to review your FY 2024 baseline period results, you can download the report through the *CMS HQR Secure Portal*.

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This webinar and HSR bundle that you are currently receiving is for the Hospital Value-Based Purchasing Program. The Public Reporting claims-based measures Hospital-Specific Reports are anticipated to be available in late April or early May. When the HSRs are available, CMS will provide a notification through the Hospital IQR and VBP Listserve notification groups. Full names are listed on this slide. If you are not signed up for those Listserve groups, you can sign up using the link available on this slide. In addition, you will receive the same email notification that your report is available to download once it becomes available.

We anticipate the Medicare Spending per Beneficiary HSRs will be available to hospitals in May or June of 2023. CMS will provide notification of the HSR availability through the same Listserve notification groups.

If you have any questions regarding measures, HSRs, and the Hospital VBP Program please submit your question using the Question and Answers Tool on QualityNet. If you experience issues accessing your HSR from the HQR System or with requesting and reviewing your HARP permissions, contact the CCSQ Service Center at [QNetSupport@cms.hhs.gov](mailto:QNetSupport@cms.hhs.gov) or call (866) 288-8912. I will now pass the presentation over to Angie Drake. Angie, the floor is yours.

**Angie Drake:** Thank you. My name is Angie Drake, and I am the HQR Analytics Delivery Manager. Today, I will be discussing the fiscal year 2024 Hospital Value-Based Purchasing mortality and complication Hospital-Specific Reports.

Beginning last November, the [Hospital] VBP reports can be downloaded directly from the Hospital Quality Reporting System from the link provided in this slide. The HQR System requires that the user has a HCQIS Access Role and a HARP Profile account that has access to log into MFT.

Step 1, log into the HQR System using your HARP account. Choose the two-factor authentication method that you have set up. Enter your code.

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Go to the menu on the left side of your screen.

Select Program Reporting on the menu, and then select Claims-Based Measures.

Select the release year. You will want to select 2023 for the fiscal year 2024 HSR. Select the program, HVBP, and the report. Click on Export, and the file will download through your browser. Once downloaded, you will have a zip file that contains your site's report and the [Hospital] VBP user guide.

The [Hospital] VBP HSR User Guide that comes with the mortality and complication HSRs includes additional information about the data in the HSRs and includes instructions to replicate the complication and mortality measure results using the discharge-level data.

Next, Kristina will talk about the COVID-19 impacts on the mortality and complication measures.

**Kristina**

**Burkholder:**

Thanks, Angie. Hi, everyone. I'm Kristina Burkholder, the implementation lead for the mortality and complication measures. Today, I'll be discussing changes made to the measures to account for COVID-19.

Here, on slide 25, we see changes to the measure cohort, or who's included in the measures. Note, there have been no additional changes to the measure cohorts for the mortality in complications measures due to COVID-19 since last year. As a reminder, all of the mortality and complication measures in your HSR will continue to exclude patients who have COVID-19. This is defined as either having a principle diagnosis of COVID-19 or a secondary diagnosis of COVID-19, coded as present on admission. The code for that is U07.1.

Same as last year, the mortality and complication measures will risk adjust for history of COVID-19. The measures use one of four codes: ICD-10 code 07.1, as principal or a secondary diagnosis on the historical claim, or Z 86.16 as a secondary diagnosis on the index or the historical claim.

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New for this year is the addition of two codes: ICD-10 code J12.82, pneumonia due to coronavirus disease, or U09.9, post COVID-19 condition.

The next two slides show how the measures handle COVID-19 and the outcomes for the measures. There have been no additional changes made since last year. For the mortality measures in your spring HSR, COVID-19 cases are not excluded from the outcome. This means that patients who die from COVID-19 within 30 days are counted as deaths in the outcome. These cases are included since the cause of death is not available and thus cannot be excluded.

For the hip-knee complication measure, some COVID-19 cases are excluded from the outcome, while others are not. Patients who had an admission after surgery for AMI, pneumonia, sepsis, or pulmonary embolism, and have a principal or secondary diagnosis of COVID-19 will not be included in the outcome. However, if the patient has a mechanical or wound complication, surgical site bleeding, or dies, these patients are included, regardless of whether or not they had COVID-19. Now, back to you, Angie.

**Angie Drake:** Thank you. Now, we are going to take a closer look at the contents of Hospital VBP Program mortality HSR.

The mortality HSR lists the hospital results in the Table 1 with further detail in the tables that follow. Table 1 provides the hospital results for the 30-day AMI, COPD, heart failure, and CABG mortality measures that will be used in the Hospital VBP Program for calculating the achievement and improvement points for these outcome measures. The achievement threshold and the benchmark were calculated on the fiscal year 2024 baseline data and are provided here for convenience. The following columns are found in Table 1: The Number of Eligible Discharges is a count of the discharges used for the measure calculations. The Performance Period Survival Rate will be used to calculate achievement and improvement points for these outcome measures in the [Hospital] VBP program.

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The Achievement Threshold was calculated as the median survival rate among all hospitals with measure results and at least 25 cases during the fiscal year 2024 baseline period. The Benchmark was calculated as the mean average of the top 10 percent of survival rates among all hospitals with measure results and at least 25 cases during the fiscal year 2024 baseline period.

Table 2 includes additional provider-level values that are used to calculate the Performance Period Survival Rate for the AMI, COPD, heart failure and CABG mortality measures. Other than the Number of Eligible Discharges and the Survival Rate, information in this table will not be publicly reported.

The following columns are found in Table 2: The Predicted Deaths is the number of predicted deaths within 30 days from admission, on the basis of your hospital's performance with its observed case mix and your hospital's estimated effect on mortality. The Expected Deaths is the number of expected deaths within 30 days of admission, on the basis of the average hospital performance with your hospital's case mix and the average hospital effect. The Replication Process, detailed later, will show how the Predicted Deaths and Expected Outcomes are calculated. The National Observed Mortality Rate is calculated as the number of observed 30-day deaths nationally divided by the number of eligible discharges nationally. Since these are national values, this rate cannot be replicated with the data provided in this HSR. The Risk-Standardized Mortality Rate, RSMR, is a mortality rate that has been adjusted for differences in case-mix across hospitals and a hospital-specific effect. As shown in footnote [e], the Risk-Standardized Mortality Rate, or RSMR, can be calculated with the values found in this table as the predicted deaths divided by expected deaths, multiplied by the National Observed Mortality Rate. The Performance Period Survival Rate is calculated as 1 minus the RSMR.

The discharge table contain discharge-level data for all Part A Medicare Fee-for-Service patient stays with a principal qualifying diagnosis of AMI, COPD, heart failure, or CABG accordingly, that had a discharge date in the reporting period, for patients who were age 65 and above at the time of

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admission. The ID Number is provided as a way to reference records while avoiding sharing the PII or PHI. The HICNO column through the Discharge Destination column contain the data as they were pulled from hospital claims. The Index Stay column indicates whether the stay is included in measure calculations by a Yes or No. The stays that are flagged Yes represent the discharges found in the Number of Discharges column in Tables 1 and 2. For stays that are not included in the measure calculations, the Inclusion/Exclusion Indicator column has numbers 1 through 9, indicating the reason or reasons why the stay was excluded. The corresponding descriptions for these numbered reasons are defined in the user guide that come with the HSR.

Deaths within 30 days are flagged Yes or No if the patient died within 30 days of admission. The Risk Factor variable column contains the model risk factors, which vary by measure. For each measure, these columns start with the mean age minus 65 risk factor. The risk factors vary for each measure. Table 4 in the user guide provides a description for each. Row 8 in the HSR contains the model coefficients for each risk factor, which are estimates over data for all hospitals. The HOSP\_EFFECT represents the underlying risk of a mortality at the specific hospital, after accounting for patient risk. The AVG\_EFFECT represents the underlying risk of a mortality at the average hospital, after accounting for patient risk. Beginning in row 9 of the HSR under each risk factor column, the cell will contain a 1 if the patient was identified as having that risk factor and equals the years above 65 for the AGE\_65 variable and a 0 if otherwise. Values will only display for each index stay that is included in the measure calculations. The risk factor flags will be in cells beginning in column O.

Next, I'll go over the replication process. The replication process for the mortality measures includes the following steps: One, calculate the predicted deaths. Two, calculate the expected deaths. Three, calculate the Risk-Standardized Mortality Rate, or RSMR. Four, calculate the Performance Period Survival Rate, or PPSR.



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The user guide that comes with your HSRs includes detailed instructions for the replication. An Excel file with sample calculations and step-by-step instructions can also be requested through the QualityNet Inpatient Question & Answer Tool.

To begin the replication process, save a copy of the HSR and complete the calculations in Excel, working below the actual data. The replication steps should be completed on the discharge-level worksheet for each mortality measure. The first step for replicating your hospital's results is to identify eligible discharges. To do this, limit your replication calculations to rows where the Index Stay column equals Yes using the filter option in Excel.

For each eligible discharge identified, multiply each risk factor flag by the relevant coefficient found in row 8. Risk factor flags begin in column N, Years Over 65 (Continuous). The formulas used are highlighted in blue on the slide.

Next, sum all the products from the previous step, risk factor flags multiplied by the coefficient, for each index discharge. This is shown in column BE. The calculation that is shown in the example is for the values in the first row. Next, add the hospital-specific effect, which is the HOSP\_EFFECT value found in cell BC8, to the sum of the risk factor flags for each index discharge calculated in the previous step. The calculation is shown in column BF. Please note that this example is for the COPD mortality measure.

Next, calculate the predicted probability of a 30-day death for each stay using the formula shown in the results from the previous step. Please note that EXP in the formula is the Excel exponential function. Finally, sum the predicted probability of a 30-day death for all of the stays to get the number of predicted deaths within 30 days from admission. When this value is rounded to two decimals, it should match the predicted deaths value for this measure in Table 2. The example formula shown in blue was used to sum the values for the predicted deaths.

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Each hospital will likely have a different quantity of discharges so the formulas will need to be adjusted accordingly.

To calculate the expected deaths, start with the summed products, risk factor flags multiplied by the coefficient, that were created in the predicted deaths calculations. Add the average hospital effect, which is the AVG\_EFFECT value found in cell BD8. Next, calculate the expected probability of a 30-day death for each stay using the formula shown and the results from the previous slide.

Finally, sum the expected probability of a 30-day death for all stays to get the number of expected deaths within 30 days from admission. When this value is rounded to two decimal places, it should match the expected deaths value for this measure in Table 2. Again, each hospital will likely have a different quantity of discharges and will need to adjust the formulas accordingly.

To calculate the Risk-Standardized Mortality Rate, first divide the predicted deaths by the expected deaths. The result is the Standardized Mortality Rate. Next, multiply the Standardized Mortality Rate by the National Observed Mortality Rate from Table 2 to get the Risk-Standardized Mortality Rate. When this value is rounded to six decimals, it should match the Risk-Standardized Mortality Rate found in Table 2. The Excel formulas used for the calculations are shown in column BH. The result of those calculations are shown in column BI.

The Performance Period Survival Rate is calculated as 1 minus the Risk-Standardized Mortality Rate. When this value is rounded to six decimal places, it should match the Performance Period Survival Rate in Table 2. The Excel formula used for the calculation is shown in column BH. The result of the calculation is shown in BI. Due to differences in rounding between SAS and Excel, there may be minor differences at the fifth and sixth decimal places. When CMS calculates your hospital's rates, it uses SAS Viya. The values in your HSR are based on SAS calculations.

Now, I will discuss the [Hospital] VBP Program complication HSR.

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Just like the mortality HSR, the complication HSR lists your hospital results in the first table with further detail in the later tables. The following columns are found in Table 1: The Number of Eligible Discharges is a count of the discharges used for the measure calculations. The Risk-Standardized Complication Rate will be used to calculate achievement and improvement points for this outcome measure in the [Hospital] VBP Program. The Achievement Threshold was calculated as the median complication rate among all hospitals with measure results and a minimum case size, greater than 25, during the fiscal year 2023 baseline period. The Benchmark was calculated as the mean of the top decile of complication rates among all hospitals with measure results and minimum case size, greater than 25, during the fiscal year baseline period.

Table 2 includes additional provider-level values that are used in the calculation of the Risk-Standardized Complication Rate. The following columns are found in Table 2: The Predicted Admissions with a Complication is the number of predicted admissions with a complication within 90 days from admission, based on your hospital performance with its observed case mix and your hospital's estimated effect on complications. The Expected Admissions with a Complication is the number of expected admissions with a complication within 90 days of admission, based on average hospital performance with your hospital's case mix and the average hospital effect on complications. The replication process, detailed earlier, shows how the predicted and expected rates are calculated. The National Observed Complication Rate is the number of observed admissions with a complication within 90 days nationally divided by the number of eligible discharges nationally. The Risk-Standardized Complication Rate is the Predicted Admissions with a Complication divided by the Expected Admissions with a Complication, then multiplied by the National Observed Complication Rate.

The complication HSR discharge table contains many of the same columns as the mortality HSR discharge table. A stay can appear multiple times on your Discharges tab if the patient had more than one complication for that discharge.

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However, it is only included once in the calculation of the measure. Similar to the [Hospital] IQR [Program] complications HSR, the Additional Complication Record column is used to flag additional complications. In the example seen here, the first two rows are the same index discharge and list the two complication records that are attributed to that discharge. This is easily identified in the Additional Complication Record column, which has a Yes value for the second record.

The discharge table contains further discharge-level data for the complication measure. The Complication field identifies the complication that occurred, AMI, Pneumonia, sepsis, surgical site bleeding, pulmonary embolism, death, mechanical complication, or infection. If a patient did not have a complication, it will appear as Not Applicable. The rest of the columns shown here contain specific information pertaining to the listed complication. The replication process for the THA/TKA complication measure is the same as the mortality measures with one difference: In the first step, when you limit your replication calculations to rows where Index Stay, column H, equals Yes, you must also limit it to rows where Additional Complication Record, footnote [c] or column I, equals No. The rest of the replication process would follow the same steps as those outlined for the mortality measures.

Now, I will discuss the Hospital VBP Program HSR review and correction period.

The Hospital VBP review and correction period for fiscal year 2024 Hospital VBP Program HSRS is April 14 through May 14, 2023. Please pay special attention to the review and correction period deadline. Requests sent after May 15, will not result in a correction.

Review and corrections requests can be submitted via email to [gnetsupport@hcqis.org](mailto:gnetsupport@hcqis.org) or over the phone to the numbers on your screen. When emailing a request, please include Hospital VBP Program Mortality Review and Corrections Inquiry or Hospital VBP Program Complication Review and Corrections Inquiry in the subject line to aid the process.

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Review and corrections requests can also be submitted through the [QualityNet Inpatient Question and Answer Tool](#). Please ensure you select Inpatient Claims-Based Measures under Program and HVBP Mortality & Complication Review & Correction Request under Topic. Please include your hospital's six-digit CMS certification number, CCN, when submitting your request.

The HSRs contain PII and PHI. Emailing PII or PHI is a security violation. If you have questions on transmitting data, please contact the QualityNet help desk. If you are referencing a specific case or discharge, please use the ID number found within the HSR, rather than sending patient information through email.

Suspected calculation errors on your report can be submitted for review with the possibility of a correction. General questions about the HSRs, the mortality measures, or the complication measure may also be submitted. Requests for submission of new or corrected claims are not allowed. A “snapshot” of the administrative claims data available approximately 90 days after the end of the applicable period is taken in order to perform program calculations. The administrative claims data file used for calculations was produced on or around the last week of September.

The review and corrections process does not allow hospitals to submit additional corrections related to the underlying claims data used to calculate the rates nor add new claims to the data extract used to calculate the rates. CMS cannot regenerate the report for this period to reflect corrected claims. If your facility submitted or wishes to submit a corrected claim after the snapshot is taken that pertained to an incorrect claim originally submitted prior to when your snapshot was taken, the corrected claim will not be included in your measure results. Because claims data are generated by the hospital itself, hospitals, in general, always have the opportunity to review and correct these data until the deadlines specified. In many cases where the claims listed in the HSRs do not match internal records, it is due to the fact that corrections were made to those claims after the deadline.

That is everything that I have for you today. Thank you for your time.

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**Brandi Bryant:** Thank you, Angie. If you have any questions regarding measures, HSRs, or the Hospital VBP Program, please submit your questions through the Question and Answer Tool on QualityNet. Thank you again for joining. We hope you have a great day.