Pioneers in Quality Expert to Expert Series: 2025 New Measure Review for Hospital Harm- Acute Kidney Injury eCQM (HH-AKI) (CMS832V2)

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00:00:01
Welcome and thank you for joining us for our Expert to Expert webinar, New Measure Review for Hospital Harm: Acute Kidney Injury eCQM for 2025 Implementation. I'm Susan Funk, an Associate Project Director with The Joint Commission's Engagement and Quality Improvement Team, and today I'll be serving as this webinar's facilitator. Thanks for joining us.

Before we start, just a few comments about today's webinar platform. Use your computer speakers or headphones to listen. There are no dial-in lines. Participants are connected in listen-only mode. Feedback or dropped audio are common for live streaming events. Refresh your screen or rejoin the event if this occurs. We will not be recognizing the Raise a Hand or the Chat features. To ask a question, click on the question mark icon in the audience toolbar on the left side of your screen. A panel will open for you to type your question and submit. The slides are designed to follow Americans with Disabilities Act rules.

Before we get started covering today's electronic Clinical Quality Measure content, we do want to explain that this webinar is highly technical and requires a baseline understanding of eCQM logic and concepts. Participant feedback from previous webinars indicated that the content is often too technical for individuals that are new to eCQMs to comprehend. We recommend that anyone new to eCQMs visit the eCQI Resource Center at the hyperlink provided on this slide. You will find a collection of resources to help you get started with eCQMs.

The slides are available now within the viewing platform. On the left side of your navigation pane, select the document icon. A new pop up window will open and you can select the name of the file. A new browser window will open and from it you can download or print the PDF of the slides. The slides will be posted at the link at the bottom of this screen within two weeks following this broadcast. One last note about the slides. The links are not clickable on screen within the viewing platform. However, if you download the slides, all links provided during the webinar are functional.

This webinar is approved for one continuing education credit or qualifying education hour for the following organizations: Accreditation Council for Continuing Medical Education, American Nurses Credentialing Center, American College of Healthcare Executives, the California Board of Registered Nursing, and all participants receive a certificate after completing the webinar and survey. Although we've listed the organizations that are credit Joint Commission to provide CEs, many other professional societies and state boards that are not listed accept credits or will match credit from Joint Commission's educational courses.

To earn CE credit, participants must individually register for this broadcast webinar, participate for the entire webinar, and complete a post-program evaluation and attestation survey. For more information on The Joint Commission's continuing education policies, visit the link at the bottom of this slide.

Just a few words about how to navigate to the CE survey and obtain your CE certificate. You will receive the CE survey link in two ways. On the last slide, we've included a QR code accessible via most mobile devices. If you miss the QR code, you will also receive an updated, an automated email within 24 hours that includes the survey link. After you complete the online evaluation survey, you will be redirected to a link from which you can print or download and save a CE certificate. An automated email will also deliver the certificate link. Complete the certificate by adding your own name and credentials.

The learning objectives for this session are: locate measure specifications, value sets, measure flow diagrams and technical release notes on the eCQI Resource Center. Facilitate your organization's implementation of the Hospital Harm Acute Kidney Injury eCQM for the 2025 calendar year. And utilize answers regarding common questions and issues regarding the Hospital Harm Acute Kidney Injury eCQM to inform 2025 eCQM use and implementation.

This webinar does not cover these topics: Basic eCQM concepts, topics related to chart abstracted measures, process improvement efforts related to this measure, and while we will not discuss the eCQM validation during this webinar, if you are submitting eCQM data, please ensure your data is validated before submitting to CMS. Finally, please note The Joint Commission will not implement this eCQM in 2025, however, it is available for submission to CMS.

00:05:18
All staff and speakers for this webinar have disclosed that they do not have any conflicts of interest. For example, financial arrangements, affiliations with or ownership of organizations that provide grants, consultancies, honoraria, travel, or other benefits that would impact the presentation of today's webinar content. Myself, Susan Funk, Michael Kerachsky, Melissa Breth, and Raquel Belarmino.

The agenda for today's discussion follows: Highlight how to access the eCQI Resource Center, review the Hospital Harm Acute Kidney Injury eCQM, review the measure flow and algorithm, review the Frequently Asked Questions, and then we'll have a facilitated audience Q&A segment during which we'll respond to submitted questions. Please note you don't have to wait until the end of the presentation to submit questions. The content experts will be responding to questions in the queue throughout the webinar.

We will now highlight how to access the CMS eCQI Resource Center. The eCQI Resource Center provides a centralized location for news, information, tools, and standards related to eCQMs. The majority of the tools and resources referenced within the eCQI Resource Center are openly available and provide a foundation for the development, testing, certification, implementation, reporting, and continuous evaluation of eCQMs.

Raquel, I'll continue screen sharing. When you're ready, please go ahead and start your part of the presentation.

Thank you, Susan. For the Measure Specifications and other helpful documents, navigate to the eCQI Resource Center website at https://ecqi.healthit.gov. Click on the second orange rectangle labeled Eligible Hospital Critical Access Hospital eCQMs, which leads to a new webpage where you can download specifications or click on the hyperlink title of the desired measure and access and readily view the specifications and data elements. Available documents include HTML version of the human readable measure specifications, value sets, data elements, the eCQM flow, technical release notes of all changes for this year, and even link out to view Jira tickets submitted for the selected measure. The eCQM flow document depicts the process flow diagrams that some may refer to as algorithms.

They walk through the steps to take to calculate an eCQM. Value sets links out to the Value Set Authority Center VSAC where one will find all the terms and associated codes contained within each value set. Note that a login is required, but anyone can request a UMLS account and it's free. For more details, view the eCQI Resource Center navigation video short.

Great, thanks, Raquel.

Michael, I'm going to make you the presenter so when you have your screen up and ready, feel free to jump in. Just one moment. Okay, Michael, we've got your screen up and sharing. If you would like to start your presentation, just unmute yourself and you're ready to go.

Hi.

Hey Michael, we're still not hearing you. Can you give us a quick audio check?

Hear me

We can now. Thanks. Everyone, please hold tight. I think we're having a little bit of a technical issue.

Can you hear me now?

Yes, we can hear you, Michael. Can you go ahead and present now?

Okay. Are we looking at the correct slide?

We have the correct slide up. You are all set to go. Thanks so much, Michael.

Okay, thanks. All right. Yeah, I will begin our review of the 2025 implementation.

Michael, I think we've lost your audio again, I'm so sorry. I know it said it's going to take an extra moment or so, for you to reconnect and I can get your screen sharing back up.

Hey, can you hear me now?

Yes, we can. So sorry.

Okay, sorry, I lost the microphone, then I switched, and now I'm back to the headset. Okay, sorry about that. Let's continue.

Okay, as I was noting, Hospital Harm Acute Kidney Injury measure, which we'll refer to as AKI, was adopted into CMS quality programs in the Fiscal Year 2024 Inpatient Prospective Payment System, IPPS, rule.

This means hospitals were able to self-select the measure for voluntary reporting beginning with the 2025 Reporting Period for Fiscal Year 2027 payment determination. Public reporting of the measure on Care Compare and the Provider Data Catalog will begin in the 2026 Reporting Period.

This measure is an outcome measure which assesses the number of inpatient hospitalizations for adult patients who experience a stage two or greater AKI during their encounter. AKI stage two or greater is defined as a substantial increase in serum creatinine or initiation of kidney dialysis.

This measure is also an inverse measure in that a lower score is better. This measure is intended to be used to identify and reduce AKI. Now the incidence of AKI in general hospitalized patients is 10 to 20% and among those critically ill is 45 to 50%. In cardiac surgery patients, this incidence ranges from 30 to 50%. AKI may result in the need for dialysis and is associated with an increased risk of mortality. A proportion of Acute Kidney Injury cases are preventable and treatable through careful management of hemodynamic status, fluids, and vasoactive medications.

00:10:49
Hospital Harm AKI is a risk adjusted measure. The purpose of risk adjustment is to promote a fair and accurate comparison of healthcare outcomes across measured entities or hospitals. Control for patient level characteristics within the population of interest and outside of the hospital's control. Patient-level characteristics may be clinical such as types, number, or severity of conditions, demographic such as age, gender, functional, such as ability to walk, or social such as income, education, geography.

Please note throughout this presentation, the star in the circle icon denotes changes with new content as underlined text and removed content as stricken text. These slides show the changes in the measure's header narrative between the 2024 Reporting Period and finalized 2025 Reporting Period versions of the Hospital Harm AKI measure. The description in which we reviewed on a previous slide remains largely unchanged.

The only change was to update the first line from the proportion of inpatient hospitalizations to the measure assesses the number of inpatient hospitalizations. This change was made to standardized descriptions across eCQMs. The Initial Population was updated to improve grammar, improve readability, and generally to more closely align with the logic and intent of the measure. Specifically, the Initial Population corresponds to inpatient hospitalizations that end during the measurement period for patients 18 years of age or older without an obstetrical or pregnancy-related condition. With a length of stay of 48 hours or longer and who had at least one serum creatinine value after 48 hours from the start of hospitalization.

The Denominator equals the Initial Population. No updates to the Denominator were made beyond those indicated in the Initial Population.

As you can see, there were changes applied to the Denominator Exclusions mainly to clarify the timing of the Denominator Exclusion criteria. So, reading from the top, inpatient hospitalizations for patients with an increase in serum creatinine value of at least 0.3 milligrams per deciliter between the index serum creatinine and a subsequent serum creatinine taken within 48 hours of the encounter start.

Next, inpatient hospitalizations for patients with an index eGFR or estimated Glomerular Filtration Rate value of less than 60 milliliters per minute within the first 48 hours of the encounter start. Next, inpatient hospitalizations for patients who have less than two serum creatinine results within the first 48 hours after the encounter start. Note the key words the first were added to clarify the timing of the Exclusion logic within the first 48 hours of the encounter start. Next, inpatient hospitalizations for patients who have kidney dialysis initiated 48 hours or less after the start of the encounter and who do not have evidence of a two times increase in serum creatinine.

Continuing with the Denominator Exclusion criteria, the next criteria is inpatient hospitalizations for patients with at least one specified diagnosis present on admission during the encounter that puts them at extremely high risk for AKI, which includes the bulleted criteria here. Note keywords during the encounter were added to clarify when the diagnosis was identified, in this case, present on admission. In addition, out-of-hospital cardiac arrest was added as this puts patients at extreme risk for AKI. The final Denominator Exclusion is inpatient hospitalizations for patients who had at least one specified procedure that starts during the encounter that puts them at extremely high risk for AKI, which includes the bulleted list here. Note keywords that starts were added to clarify that the timing of these specified procedures must start during the encounter.

00:15:59
Moving on to the Numerator. The Numerator looks for inpatient hospitalizations for patients who develop AKI stage two or greater during the encounter as evidenced by a subsequent increase in serum creatinine value at least two times higher than the lowest serum creatinine value and the increased value is greater than the highest sex-specific normal value for serum creatinine or kidney dialysis initiated more than 48 hours after the encounter start. Evidence of a two times increase in the serum creatinine is not required.

Note that there is minor wording changes to the kidney dialysis text indicating that evidence of a, of stage two AKI is not a requirement for kidney dialysis.

Finally, the text only one harm is counted per encounter was added to clarify that though a single encounter may result in evidence of more than one AKI, only one AKI is reported per encounter.

Finally, we are looking at the risk adjustment portion of the header, which is split across two slides. Risk adjustment includes sex and age as well as the first vital signs since the encounter start. Note that temperature was moved to the bottom of the list to sort by alphabetical order.

Next, for the text after the bulleted vital signs, which reads the estimated Glomerular Filtration Rate eGFR, which is calculated using index serum creatinine patient sex and age-based formula. We added the words, which is to clarify the components used in the eGFR calculation.

Next, patient sex collected for risk adjustment and to calculate the eGFR is determined by the administrative gender codes, F for female and M for male. These codes make up the ONC Administrative Sex value set and are also used to derive the supplemental data element of patient sex for the measure.

Finally, all encounter diagnoses, along with their Present on Admission indicators, are being collected for the development of the baseline risk adjustment model with initial focus on any encounter diagnoses captured for cancer, diabetes, heart failure, hypertension, obesity. Note that minor edits were applied to clarify that while all encounter diagnoses and their POA indicators are being collected, those captured in this list are primary. Finally, as referenced at the bottom, the Hospital Harm Acute Kidney Injury Risk Adjustment Methodology Report is available on the eCQI resource center.

Okay, we will now review a Frequently Asked Question before diving into the measure flow depiction. The question on the screen here is, "Can we use a direct value for eGFR or is it mandatory to compute the value using the CKD-EPI or chronic kidney disease epidemiology collaboration creatinine equation mentioned in the measure specification. In response, we require calculation of eGFR using the CKD-EPI creatinine equation to standardize the value being used within the measure. A direct value may vary based on laboratory system reporting. The CKD-EPI creatinine equation is recommended by the National Kidney Foundation and American Society of Nephrology.

This formula is gender-specific, race-neutral.

00:20:04
Next, we'll review the measure flow, which provides a high level overview of how the measure works.

Starting with the yellow swim lane, the Initial Population is defined as Encounter with Creatinine and without Obstetrical Conditions. The following conditions must be met to qualify for this definition, which are included in the logic on the right.

First, there must be an inpatient encounter with creatinine where creatinine test result is not null and is performed 48 hours after the start of hospitalization with observation, and two, there must be an encounter with age 18 and length of stay 48 hours or more and male or female sex. This means that there was an inpatient encounter which ends during the day of measurement period and the patient is greater than or equal to 18 at the start of the encounter. The duration of hospitalization with observation is greater than equal to 48 hours. Patient's characteristic sex is female or male where not exists, meaning where there is not an encounter diagnosis code in the obstetrical or pregnancy-related conditions value set. If the criteria is met, the patient is included in the Initial Population. If not, the patient is not in the Initial Population and processing ends. In the blue Denominator section at the bottom, we see the Denominator equals the Initial Population.

Note the blue diamond in the upper right corner of the Initial Population box with an A. This is used to identify the Denominator component which will be included in the sample calculation as we will see.

This slide begins the depiction of the Denominator Exclusions conditions.

Michael, we just lost-

Yeah, I just lost, I'm sorry.

No, that's fine. I thought I'd let you know so you can get the- Yeah. The right slide up.

That's the one.

Okay. Great, thank you. Sorry about that.

This slide begins the depiction of the Denominator Exclusions conditions of which there are six detailed in the definition at the top of the screen and over the next three slides. At the top of the slide, we begin with evaluating for an encounter with 0.3 milligrams per deciliter or more increase in creatinine within the first 48 hours. This Exclusion evaluates for patients that may be admitted to inpatient hospitalization with an AKI that started prior to admission. Note the dark blue diamond in the upper right corner of the definition box with a B1. This is used to identify this Denominator Exclusion component which will be included in the sample calculation. Now following the arrow down, the logic looks for whether there is an increase of 0.3 or more using lowest creatinine within 24 hours. If yes, then on the right, this definition should be evaluated.

The logic first evaluates for an encounter with creatinine and without obstetrical conditions where the result is not null and the laboratory test must be documented using a code from the creatinine mass per volume value set where the index test is not a subsequent test and the test took place during the first 24 hours of hospitalization with observation and there was a subsequent test during the first 24 hours of hospitalization with observation and the index test starts before the subsequent test and the subsequent test index test value is greater than 0.299. Note we use 0.299 rather than 0.3 due to the variability of decimal precision with programming languages and calculation tools.

Now, if there does not exist an increase of 0.3 or more using lowest creatinine within 24 hours, then moving to the left, we must evaluate for an increase of 0.3 or more using first creatinine within first 48 hours. The logic is very similar to the increase of 0.3 or more using lowest creatinine within 24 hours, with the exception being that the index test must be obtained within the first 48 hours.

Now this slide contains two Denominator Exclusion criteria, each of which is included in the dark blue diamond, B2 and B3 in the upper right corner of the definition box. Specific to the second Denominator Exclusion, we see the definition for Encounter with Index eGFR Less Than 60 within First 48 Hours. This corresponds to a male or female qualifying encounter with creatinine and without obstetrical conditions where the index eGFR, either male eGFR or female eGFR is not null and less than 60 milliliters per minute.

00:25:21
Next, we have the definition for Encounter with Less Than Two Creatinine Results within First 48 Hours, which pulls in the qualifying encounter, then evaluates for whether there are less than two laboratory tests performed within the first 48 hours. And we see the dark blue diamond B3 in the top right corner.

Moving on to the final three Denominator Exclusions. We first have the definition for Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival with High Creatinine. The logic first evaluates for an Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival. Where a procedure was performed utilizing a code in the Hospital-Based Dialysis Services Value Set that was initiated within 48 hours of hospitalization with observation, encounter with creatinine and without obstetrical conditions where dialysis starts within 48 hours of hospitalization with observation, and where not encounter with two times serum creatinine increase. So, there is no evidence of a two times increase in serum creatinine during the encounter.

The next Denominator Exclusion criteria is Encounter with High Risk Diagnosis for AKI, which corresponds to D5 in the sample calculation. The logic evaluates for encounter with creatinine and without obstetrical condition where exists an encounter code for high risk for diagnosis for AKI that was present on admission and during hospitalization with observation. The final Denominator Exclusion criteria is encounter with high risk procedure for AKI which corresponds to B6 in the sample calculation. The logic evaluates for encounter with creatinine and without obstetrical conditions with a procedure code from the high risk procedures for AKI that starts during hospitalization with observation.

The flow continues to depict how the Numerator is evaluated. To meet the Numerator criteria, there must be either an encounter with evidence of a two time serum creatinine increase or an encounter with kidney dialysis.

First looking at the definition for encounter with two times serum creatinine increase, which corresponds to C1 for the sample calculation, we first see that the logic evaluates for encounter with 1.5 times serum creatinine increase where there is both a high and low serum creatinine result and the high test result is greater than the serum creatinine normal, which means it is greater than the patient characteristic sex, male or female. The high test result is during hospitalization with observation and the low test is performed seven days or less before the high test. Both tests are during hospitalization with observation and the high creatinine test is at least 1.5 times the low test.

Next, the high and low creatinine values are evaluated for two times increase. Looking at the definitions at the top of the page from left to right we see the or operator, which means that an encounter will meet the Numerator if either definition is satisfied. Moving on to the right side, we see the definition for Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival without High Creatinine, which corresponds to C2 in our sample calculation.

The logic first pulls in the definition for Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival, which evaluates for a procedure with a code from the hospital-based dialysis services value set. The logic then looks for encounter with creatinine and without obstetrical conditions where the procedure starts 48 hours after hospitalization with observation where not exists encounter with two times serum creatinine increase. If the criteria is met, the encounter is in the Numerator. If the criteria is not met, the encounter is not in the Numerator.

00:30:08
The measures Denominator, Denominator Exclusions, and Numerator are now defined and we can plug the quantities into the sample calculation formula. The Performance Rate aggregates the populations into a single Performance Rate for reporting purposes. In this example, the Numerator C1 plus C2 equals 20 is divided by the Denominator A equals 100 minus Denominator Exclusions B1 through B6 equal 20 to equal a 25% Performance Rate. Remember at the lower the rate, the higher the quality.

All right, next we'll review the measure logic.

All right, let's quickly level set on the layout of the slide. The top of the slide describes the population narrative followed by the CQL logic population definition in the blue text box. This slide includes the full narrative description of the Initial Population as well as the corresponding logic definition in the blue box encounter with creatinine and without obstetric conditions. Here we are looking for an inpatient encounter that ends during the measurement period for patients 18 years of age and older without an obstetrical or pregnancy-related condition with a length of stay of 48 hours or longer with at least one serum creatinine value. We will use the next two slides to break down the logic used to express the Initial Population.

Beginning with the broadest criteria, we want to define the qualifying encounter nested within the encounter with creatinine and without obstetrical conditions definition. The first line to evaluate nested in this definition is Impatient Encounter with Creatinine. The logic first evaluates for encounter with age 18 and length of stay 48 hours or more and male or female sex, which we'll review on the next slide.

In short, to meet this criteria, there must be an inpatient encounter which ends during the measurement period, an age is greater or equal to 18, and the duration of the hospitalization with observation is greater than or equal to 48 hours, and patient characteristic is defined as either female or male. Once we pull data for the encounter with age 18 and length of stay 48 hours or more and male or female sex, the next line under inpatient encounter with creatinine specifies that a lab test is performed with a code documented in the creatinine mass per volume value set. The next line uses global hospitalization with observation to identify encounters that are greater than 48 hours in length. The logic then pulls the earliest creatinine test that is not null and where the test is conducted between 48 hours after the start of the hospitalization to the end of the hospitalization period. Within this definition, changes were applied to remove redundant timing logic.

Going back to the top under encounter with creatinine and without obstetrical conditions, once we have evaluated for the inpatient encounter with creatinine, the logic includes words where not exist to denote that the encounter cannot include a diagnosis code from the obstetrical or pregnancy-related conditions value set. I'd like to point out two things here. The measure uses the global hospitalization with observation function to determine the interval of the entire inpatient hospitalization encounter, which includes time in the emergency department or observation when these encounters are within one hour of the inpatient admission. The measure uses the global EarliestOf function for the medication data type as we have both a relevant date, time, and relevant period. If the point in time is specified, the logic returns the point in time and it returns the starting point of the period if the period has a starting boundary specified.

Otherwise, it returns the ending point of the period. As we saw on the prior slide, nested within the definition for inpatient encounter with creatinine is the definition for encounter with age and length of stay 48 hours or more and male or female sex. As a reminder, this definition evaluates for an inpatient encounter which ends during the measurement period and age is greater and equal to 18. The duration of the hospitalization with observation is greater than or equal to 48 hours and the patient characteristic is identified as either female or male. The logic to evaluate for female or male patient characteristic was added for purposes of calculating the eGFR.

00:35:36
Moving to the Denominator. This is the same as the Initial Population, so rather than repeating the Initial Population, the logic again, we can simply call on the Denominator statement Initial Population, which we reviewed in the previous slide.

Moving on to the Denominator Exclusions. This slide includes the narrative description from the header section. The CQL definitions will be reviewed in subsequent slides.

Okay, this slide includes the Denominator Exclusion definitions outlined in the narrative we saw on the prior slide. These include encounter with 0.3 Milligrams Per Deciliter or More Increase in Creatinine within First 48 Hours, Encounter with Index eGFR Less Than 60 within First 48 Hours, Encounter with Less Than Two Creatinine Results within First 48 Hours, Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival without High Creatinine, Encounter with High Risk Diagnosis for AKI, Encounter with High Risk Procedures for AKI. The union operator, which is included prior to each definition here, allows for conditions under any of these six definitions to meet the Denominator Exclusion.

Next, to better align the logic with the measure intent as documented in the header, several minor naming updates were made. In the subsequent slides, we will review each Denominator Exclusion criteria.

The first Denominator Exclusion logic definition is encounter with 0.3 Milligrams per Deciliter or More Increasing Creatinine within First 48 Hours. This logic evaluates for an increase of 0.3 or more using lowest creatinine within 24 hours. We see the key words if exists prior to this definition. This indicates that if this criteria is met, the patient is captured in the Denominator Exclusion. However, if this criteria is not met, the logic evaluates for an increase of 0.3 or more using first creatinine within first 48 hours. This is conveyed using keyword else prior to this definition. If this criteria is met, the patient is captured in the Denominator Exclusion. If neither of these criteria are met, then the patient does not meet the Exclusion.

Note, the logic has been updated to remove redundant timing logic. On the next slide, we will review the nested definitions in greater detail.

The first nested definition under encounter was 0.3 milligrams per deciliter or more increase in creatinine within first 48 hours is increase of 0.3 or more using lowest creatinine within 24 hours. This definition first pulls in the qualifying encounter from the Initial Population encounter with creatinine and without obstetrical condition. Condition, sorry. The logic then evaluates for an increase in serum creatinine within 24 hours of hospitalization with observation based on the lowest index serum creatinine.

Note, the logic evaluates whether the increase serum creatinine result is greater than 0.299. As we indicated, the logic uses 0.299 rather than 0.3 due to the variability of decimal precision with programming languages and calculation tools. If there are no serum creatinine values within the first 24 hours, then the logic evaluates for an increase of 0.3 or more using the first serum creatinine within the first 48 hours of hospitalization with observations, with observation, which we will review on the next slide.

As we continue to evaluate the definition encounter with 0.3 milligrams per deciliter or more increase in creatinine within first 48 hours. Again, if there is no increase of 0.3 or more using lowest creatinine within the first 24 hours, the logic evaluates for an increase within the first 48 hours of hospitalization with observation.

00:40:28
The next Denominator Exclusion is Encounter with Index eGFR Less Than 60 within First 48 Hours. The logic evaluates for either a male encounter with eGFR less than 60 or a female encounter with eGFR less than 60. The logic begins by including a qualifying encounter, then looks for either a male eGFR or female eGFR with the value of less than 60 milliliters per minute, which based on the qualifying encounter, must be within 48 hours of the hospitalization with observation.

The next Denominator Exclusion is encounter with less than two creatinine results within first 48 hours. Note that the definition name alone was updated to clarify the timing of the creatinine results within the first 48 hours. The logic first pulls in the qualifying encounter, then counts the number of tests to determine whether there are less than two serum creatinine results within the first 48 hours of hospitalization with observation.

The next Denominator Exclusion is Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival without High Creatinine. This definition first evaluates for encounter with kidney dialysis started 48 hours or less after arrival where not encounter with two times serum creatinine increase.

The next Denominator Exclusion is encounter with high risk diagnosis for AKI where there is at least one specified diagnosis present on admission during the encounter that puts the patient at extremely high risk for AKI. This includes qualifying encounters where there is a code in the high risk diagnosis for AKI value set and the present on admission or clinically undetermined value set.

The last Denominator Exclusion definition is encounter with high risk procedures for AKI, which looks for the inpatient hospitalizations or qualifying encounters where there is a code in the high risk procedures for AKI value set.

As a reminder, the Numerator is inpatient hospitalizations for patients who develop AKI stage two or greater during the encounter as evidenced by subsequent increase in serum creatinine value at least two times higher than the lowest serum creatinine value and the increased value is greater than the highest sex-specific normal value from serum creatinine or kidney dialysis initiated more than 48 hours after the start of the encounter. Evidence of a two times increase in serum creatinine is not required. And remember that only one harm is counted per encounter. At bottom, we include the Numerator CQL definition names: Encounter with Two Times Serum Creatinine Increase, Encounter with Kidney Dialysis Started More Than 48 hours After Arrival without High Creatinine. As a reminder, the union operator allows for conditions under either of these two definitions to meet the Numerator. We will use the next three slides to evaluate the Numerator logic.

For the Numerator logic, please note that some of the information included in the overview may have been discussed earlier when reviewing the measure flow. For definition Encounter with Two Times Serum Creatinine Increase, we must first evaluate for an AKI by pulling from definition encounter with 1.5 times serum creatinine increase, which we'll review in greater detail on the next slide.

In short, this logic identifies the high and low serum creatinine result during the hospitalization with observation and sorts by earliest of. The logic then determines whether the high test result is greater than the serum creatinine normal, which again means it is greater than the patient characteristic sex, male or female. The low serum creatinine test must be performed seven days or less before the high test and the high test result must be obtained 48 hours after the start of the encounter and either 30 days after the start of the encounter or discharge, whichever is sooner.

00:45:29
Okay, back to the definition of encounter with two times serum creatinine increase. Now that we have identified patients with a 1.5 time serum creatinine increase, we must work through this definition to stage the AKI by evaluating for a two times increase. So, we have both a high and low serum creatinine result and the high test is greater than the serum creatinine normal value, which corresponds to the highest normal serum creatinine value for females, which is 1.02 milligrams per deciliter, and males, which is 1.18 milligrams per deciliter.

Now, the function 2.0 increase in creatinine takes the high creatinine and divides by two, thereby evaluating whether the increased creatinine value is at least two times the lowest value. The low creatinine test must be obtained prior to the high creatinine test, and the high test result must be obtained after the first 48 hours after the start of encounter and either 30 days after the start of the encounter or discharge, whichever is sooner.

Now taking a step back to the initial identification of an AKI. As we saw in the prior slide, we must first evaluate for an encounter with 1.5 times serum creatinine increase. Now let's take a look at this definition. This is very similar to the two times increased definition where we have both the high and low serum creatinine result during hospitalization with observation, and the high test result is greater than the serum creatinine normal value. Meaning the high value is greater than the patient characteristics sex, male or female. Now function 1.5 increase in creatinine takes the high creatinine divides by 1.5 thereby evaluating whether the increased creatinine value is at least 1.5 times the lowest value. Now, the low creatinine value must be performed seven days or less before the high creatinine test. The low creatinine test must be obtained prior to the high creatinine test and the high test result must be obtained after the first 48 hours after the start of the encounter and either 30 days after the start of the encounter or discharge, again, whichever is sooner.

Next, we will look at the definition for Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival without High Creatinine. The logic first evaluates for an encounter with kidney dialysis started more than 48 hours after arrival. The definition for which is nested below. The first criteria evaluates for a procedure code found in the hospital-based dialysis services value set. The logic then pulls in the qualifying encounter where the procedure starts 48 hours after hospitalization with observation and dialysis starts during hospitalization with observation.

Moving back up to the first definition, encounter with kidney dialysis started more than 48 hours after arrival without high creatinine, the first criteria evaluates for procedure code found in the hospital-based dialysis services value set. The second line evaluates for the absence of an Acute Kidney Injury during the encounter where not exists encounter with two times serum creatinine increase.

Next, we will review the risk adjustment variables used for this eCQM. For each risk variable, the logic pulls from the qualifying encounter. First is Risk Variable All Encounter Diagnoses with POA Indicator, sorry, POA Indication. Which evaluates for a qualifying encounter code with a present on admission indicator. Next is Risk Variable Estimated Glomerular Filtration Rate for Females, which evaluates for an eGFR value calculated using the CKD-EPI creatinine equation included in function female eGFR.

00:50:09
Moving along through the risk adjustment variables, next, we have risk variable Estimated Glomerular Filtration Rate for Males which evaluates for calculated eGFR value used in function male eGFR. Next is Risk Variable First Heart Rate, which evaluates for the first heart rate during the encounter.

Finally, this slide lists the remaining risk adjustment variables obtained during the encounter including First Respiratory Rate, First Systolic Blood Pressure, and finally First Temperature.

Next, we'll review a known issue associated with CMS832 version two. eCQM known issues are posted to the Jira ONC eCQM Known Issues Project, which we provide a link to on the next slide. Known issues are CMS approved, implementation related or technical issues that have been documented, and for which a solution is or will be under development. Technical issues include but are not limited to contradictions between the eCQM narrative and logic, value set issues, logic-related issues, or the inconsistent application of standards. Implementation issues arise when a measure is implemented in a manner that yields unexpected results, though, the measure logic itself is structured appropriately and as originally intended. The known issues specific to CMS 832 version two represents a technical issue with the specification.

Here we display the posted known issue text found on the eCQM Known Issue Project. Please note the link to the project at the top of the page. Looking at the layout of this known issue, we see the following fields. The key field includes the unique idea of the Jira ticket, in this case EKI-35. The description includes a high level overview of the issue. The solution field indicates whether there is a solution or a workaround to the issue in the identified Reporting Period. The year corresponds to the Reporting Period, in this case, 2025. And the links column includes the initial Jira inquiry that led to the identification of the known issue. And while the description text represents a consolidated counting of the issue, I'd like to provide a bit more detail. On this issue was prompted by Jira ticket CQM-7220 referenced in the right-hand column in which the reporter asked about Numerator compliance specific to the 1.5 and two times increase in serum creatinine. This issue prompted the measure developer to evaluate how the logic was working, including running test cases with multiple low and high creatinine results.

If we recall the Numerator criteria for evaluating an AKI stage two or greater are as follows, identify the AKI through evidence of serum creatinine value at least 1.5 times higher than the lowest value obtained within the prior seven days. The highest serum creatinine value must be collected after 48 hours and before discharge or 30 days, whichever is sooner. If a 1.5 times increase is identified, then the high value must be greater than the highest sex-specific normal value for serum creatinine.

Next, we stage the AKI through evidence of a serum creatinine value at least two times higher than the lowest prior value at any prior time during the encounter. The high serum creatinine value must be collected after 48 hours and prior to discharge or 30 days, whichever is sooner. If a two times increase is identified, then the high value must be greater than the highest sex-specific normal value for serum creatinine. If this criteria is met, the encounter is included in the Numerator. Upon testing the Numerator logic specific to staging in AKI stage two or greater and CMS832 version two, the measure developer confirmed the measure intent and Numerator logic are not in alignment.

Specifically the measure intent is to evaluate all serum creatinine values obtained between 48 hours after the start of the encounter and either 30 days after the start of the encounter or discharge.

However, in instances where there are multiple high and low values, the current logic only evaluates the highest and lowest overall values during the encounter and does not constrain the low value to within seven days prior to the high value. This error leads to patients not meeting Numerator criteria and therefore, under-counting cases that should be Numerator compliant.

00:55:20
Moving on to the solution field, we see that there is no solution for the 2025 Reporting Period specifications CMS832 version two. This is because eCQM specifications are not reposted, therefore, the measure logic as currently specified should be followed. It is important to note that the measure developer has resolved this issue of ensuring that all high and low serum creatinine values are evaluated in the current 2026 implementation of CMS832 version three.

As we learned from the prior slide, the logic only evaluates the lowest and highest serum creatinine for evidence of an AKI stage two or greater. In figure one, we review the impact of only evaluating lowest overall serum creatinine value where there are multiple high and low values during the encounter. To level set, this figure shows an inpatient encounter that runs 16 days. The first two days represent the index serum creatinine period when the initial serum creatinine is obtained.

Note that the high serum creatinine value must be obtained between 48 hours after the encounter start through 30 days or discharge, whichever is sooner. When reviewing against the current logic, the encounter fails to meet the 1.5 and two times increase because the lowest overall value is not prior to the highest overall value. In this scenario, the lowest overall value is 0.8, occurs on day sixteen, and we see here it's denoted by the red box. The highest overall value, 1.9, occurs on day four denoted by the green box. Because the lowest overall value does not occur within seven days prior to the highest value, this example does not meet the Numerator criteria.

Now, per the measure intent, the encounter should meet the Numerator criteria. Value 1.9 on day four represents both a 1.5 and two times increase in serum creatinine from the lowest value within the prior seven days, 0.9 on day one. Though value 0.9 on day one is not the lowest value in the encounter, the intent of the Numerator logic is to evaluate all serum creatinine values for a 1.5 and two times increase.

In the prior scenario, we reviewed how the current Numerator logic is out of alignment in instances where an encounter contains more than one low serum creatinine value. In figure two, we review the impact of only evaluating the highest overall serum creatinine value where there are multiple high and low values during the encounter.

Again, to level set, this figure shows an inpatient encounter that runs 15 days. The first two days represent the index serum creatinine period when the initial serum creatinine is obtained. Note that the high serum creatinine value must be obtained 48 hours after the encounter start through 30 days or discharge, whichever is sooner. When reviewing against the current logic, the encounter fails because the highest overall value does not represent a 1.5 times increase from any value within the prior seven days. In this scenario, the highest overall value is 1.6 on day fourteen and the lowest overall value is 0.6 on day five. Because the lowest value is more than seven days prior to the highest, the scenario does not meet the Numerator criteria. Per the measure intent, the encounter should meet the Numerator criteria. When evaluating the second highest value, which is 1.3 on day seven, this represents both a 1.5 and two times increase from the lowest value within the prior seven days, 0.6 on day five. The current measure logic does not evaluate value 1.3 inclusion in the calculation because this is neither the highest nor the lowest value in this set.

Okay, Susan, back to you.

Wow, thank you so much, Michael. That's was a very long presentation. I'm so glad you were able to get through all of your content though and we've still got a few minutes left for the questions. Real quick, I'm just going to run through some links that we've provided for the audience. We've included some resource slides and links. One of them is to the eCQI Resource Center CMS-Eligible Hospital Measures page and the Get Started with eCQM's links, the Teach Me Clinical Quality Language video series landing page, as well as video shorts on Hospitalization with Observation and What is a Value Set.

Next slide.

01:00:32
And then the next slide, we are continuing with resource links. We have a link out to the Value Set Authority Center or the VSAC Support, the Pioneers In Quality landing page on The Joint Commission's website, the Expert to Expert Webinar Series landing page, and finally the ASTP/ONC Issue Tracking System where clinical and technical questions about these eCQMs should be submitted following this webinar.

Next slide. We'll now jump into our live Q&A segment. I'm going to leave the directions up, but if you click on the Question Mark Icon, a panel will open for you to type and submit a question. The written follow-up Q&A document will address both questions we answered during the webinar and those we do not get to during the broadcast, and that follow-up document will be posted on The Joint Commission website several weeks after live event after CMS approval.

Michael, I'll take over screen sharing and Melissa and Raquel, please feel free to jump into the questions in the queue. Melissa, I think you volunteered to go first, so please start whenever you're ready.

Sure, thanks. This is Melissa Breth, Associate Project Director with the Clinical Informatics Team with The Joint Commission. I want to point out that the first few questions that we'll read off actually were submitted prior to today's broadcast when folks were registering, so thank you very much for your questions ahead of time.

And the first question is, "Why is patient-characteristic sex included in the mapping?"
This measure includes eGFR values, which have sex-specific values.

Hello. The next question is, "Do the Hospital Harm eCQMs correlate with the patient safety indicator PSIs?"
The PSIs are claim-based measures maintained by AHRQ. There are similar topics within the PSIs and Hospital Harm eCQMs, but they are different measures.

Next, "What will be the documentation requirements so that we can ensure we have the fields in our EHR to capture the data?"
We suggest working with your EHR vendor and clinical partners to ensure that the eCQM requirements are documented appropriately. The CMS832 version two eCQM specification is posted on the eCQI Resource Center. For more information on data collection and reporting requirements, please reference the 2025 CMS-QRDA 1 Implementation Guide for hospital quality reporting, as well as the CQL Style Guide version seven.

Next, "Are Critical Access Hospitals exempt from reporting HH-AKI?" Critical Access Hospitals, CHSs, report through the Medicare Promoting Interoperability Program. CHAs are required to report six eCQMs, three mandatory and three self-selected. This measure is available as a self-selected measure. For more information on promoting interoperability program reporting requirements, please visit the CMS promoting interoperability website.

Next question. "The eCQM specifies that AKI is evaluated using serum creatinine to measure kidney function. Are there alternatives to serum creatinine such as creatinine as measured in the urine that are acceptable to evaluate serum creatinine levels?" The HH-AKI measure uses serum creatinine to measure kidney function because serum creatinine levels are the most reliable and consistently available data element in the EHRs for diagnosing AKI. Additionally, serum creatinine is used by many guidelines to define and monitor AKI.

Next, "What benchmarks or targets are set for this metrics?" There is not yet a national average for the HH-AKI measure. For this measure, a lower measure score indicates higher quality.

01:05:21
"Can you define the encounter start time? Does this include time in the emergency department and/or in observation?" The HH-AKI measure uses the Hospitalization with Observation function to determine the start of the inpatient hospitalization. This function includes ED and observation encounters when discharge from these encounters and admission to the inpatient encounter is one hour or less.

Okay, next question. "What is considered significant increase in creatinine?" CMS832, the HH-AKI measure is looking for stage two or higher AKI defined as an increase in serum creatinine at least two times higher than the lowest serum creatinine value, where the increased value is greater than the highest sex specific normal serum creatinine value.

"Will clinical documentation of AKI without the findings of creatinine changes and/or initiation of dialysis pull patient into this measure?" Clinical documentation is not sufficient to pull patients into the measure. Documentation of an increase in creatinine or dialysis is required.

Okay, the next question, "The presenter just added the words the first before 48 hours on slide 19 where it was not printed on the slide, eGFR value section." Denominator Exclusion language was updated for 2025 to inpatient hospitalizations for patients who have less than two serum creatinine results within the first 48 hours of the encounter start. I will read one more question as it looks like we have a minute left in our time. Please note that the answers to all these questions will be posted in the upcoming weeks, in several weeks.

So, the next question is, "There is no Value Set OID for risk variable all encounter diagnoses. Does it mean it doesn't need to be included in the QRDA?" A value set is not needed to extract these conditions from the EHR. All encounter diagnoses will be returned from the quality encounter and included in the QRDA 1 file.

Excellent. I wanted to let it go a little bit longer on the rest of the content is a little bit more operational, so I wanted to get to as many questions as we could today. Thank you, Melissa and Raquel, and to the team that was responding to the questions.

All Expert to Expert Webinar recording links, slides, transcripts, and after approved by CMS, Q&A documents, can currently be accessed on The Joint Commission's webpage. The captioned recording and materials will be available via the link we've provided on this slide within several weeks. In today's handouts, we have also included a PDF that includes the registration links for all of the Expert to Expert Webinars that are currently open for registration. The link on the slide leads to the Expert to Expert landing page on The Joint Commission website, which also includes these links. Before this webinar concludes, a reminder about the CE survey.

Joint Commission uses your feedback to determine education gaps and form future content and to assess the quality of our educational programs. As explained earlier, a QR code is provided on the next slide. If you prefer to take the CE survey later, an automated email also delivers the survey link. At the end of the survey when you click submit, you'll be redirected to a page from which you can print or download a certificate that you will complete by adding your name and credentials. An automated email will also provide that link and that email will be sent to the address that you provide within the CE survey.

I'll pause here for just a few moments so that everyone that wishes to use the QR code can scan it with their mobile device. Thank you, Michael for developing and presenting the content, Melissa, and Raquel for facilitating the Q&A segment and thanks so much to the team that was responding to all of those questions as the audience was submitting them. Finally, thanks to all of you that attended today. Have a great day.