Expert to Expert Webinar

2025 New Measure Review for Hospital Harm – Acute Kidney Injury eCQM (HH-AKI) (CMS832v2)

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New to eCQMs?

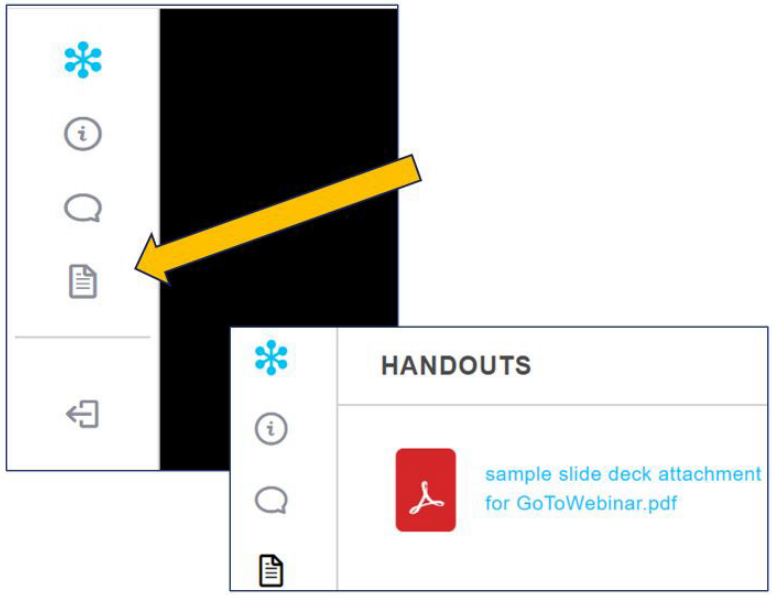
Today's content is highly technical and requires a baseline understanding of eCQM logic and concepts

Visit this section of the eCQI Resource Center:

"Get Started with eCQMs"

(https://ecqi.healthit.gov/ecqms?qt-tabs_ecqm=tools-resources)

Access the Slides



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Webinar approved for 1 Continuing Education (CE) Credit for these entities

- Accreditation Council for Continuing Medical Education (PRA Category 1 credit)
- American Nurses Credentialing Center
- American College of Healthcare Executives (1 Qualifying Education Hour)
- California Board of Registered Nursing

CE Requirements

1) **Individually register** for this webinar
2) Participate for the **entire broadcast**
3) Complete a post-program **evaluation/ attestation**

For more information on The Joint Commission's continuing education policies, visit this link https://www.jointcommission.org/resources/continuing-education-credit-information/

CE Survey and Certificate

After webinar, survey can be accessed in two ways:

1) QR code on final slide
2) Link within participant follow-up email

Complete CE survey and **SUBMIT.**
Certificate will appear onscreen. **Print or download** PDF Certificate.
Complete certificate by adding your name and credentials.

Learning Objectives

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.

Utilize answers regarding common issues/questions regarding the Hospital Harm Acute Kidney Injury eCQM to inform 2025 eCQM use/implementation.

Topics Not Covered in this Program

Basic eCQM concepts

Topics related to chart abstracted measures

Process improvement efforts related to this measure

eCQM validation

Please note: The Joint Commission will not implement this eCQM in 2025, however it is available for submission to CMS

Disclosure Statement

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.

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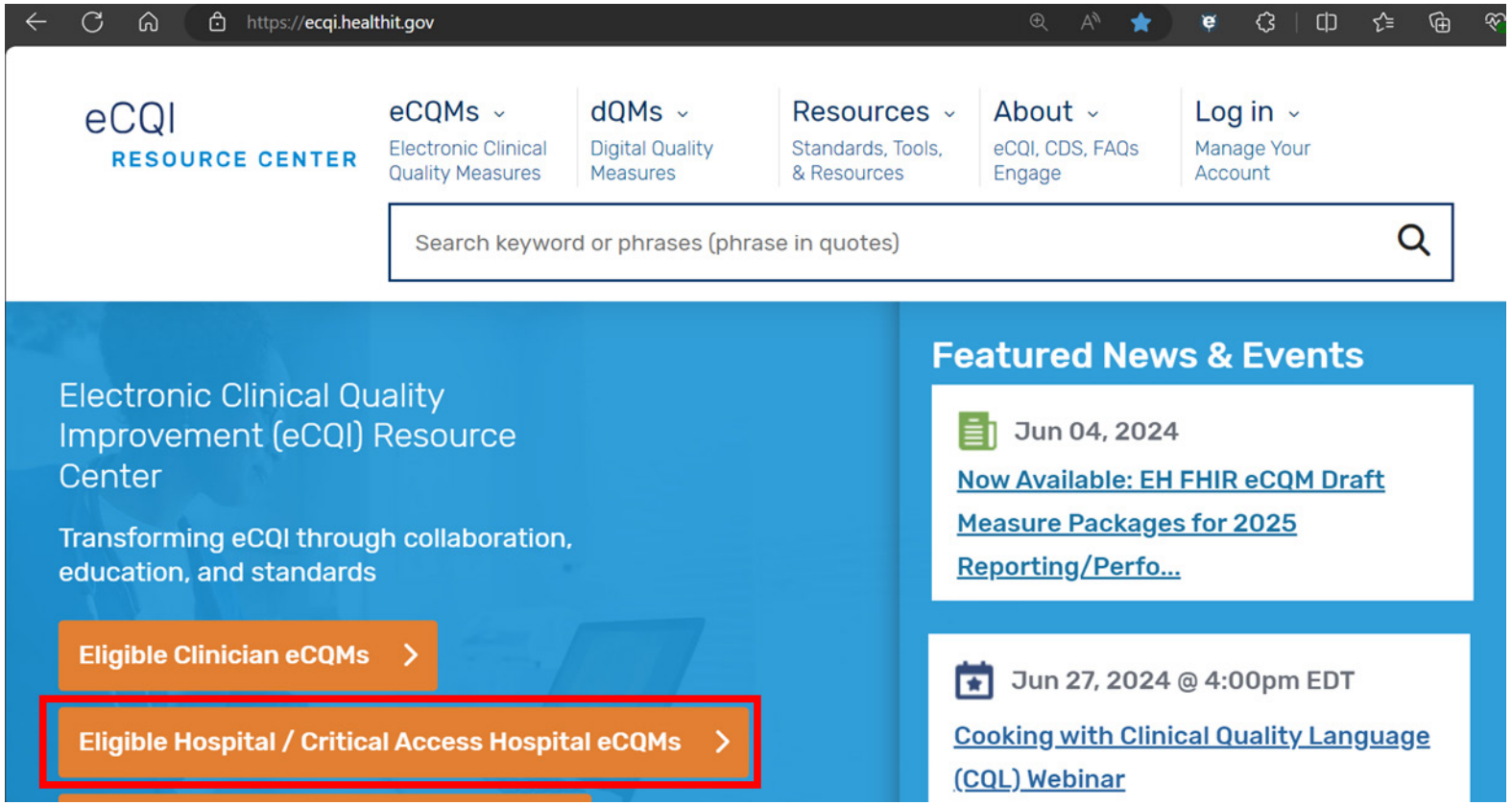
Webinar Agenda

- Highlight how to access eCQI Resource Center navigational demo (measure specifications, value sets, measure flow diagrams and technical release notes)
- Review the Hospital Harm – Acute Kidney Injury eCQM
- Review the measure flow/algorithm
- Review FAQs
- Facilitated Audience Q&A Segment

eCQM Resources on the eCQI Resource Center

eCQI Resource Center

https://ecqi.healthit.gov



Download and/or View Specifications

- "Human Readable" html
- Value Sets
  - ***Value Set Authority Center (VSAC)***
- Data Elements
- eCQM Flow (PDF)
  - ***(process flow diagrams)***
- Technical Release Notes (TRNs) (Excel)
- Jira Issue Tracker tickets

eCQI Resource Center Navigational video short available via this page:
https://www.jointcommission.org/measurement/quality-measurement-webinars-and-videos/expert-to-expert-webinars/

Hospital Harm – Acute Kidney Injury (HH-AKI) (CMS832v2)

HH-AKI – Background (1)

- CMS finalized the adoption of HH-AKI into the Hospital Inpatient Quality Program in the fiscal year (FY) 2024 Inpatient Prospective Payment System (IPPS) rule
- Hospitals began voluntary reporting of the measures for the calendar year (CY) 2025 reporting period/FY 2027 payment determination
- Public reporting through the Provider Data Catalog will begin in CY 2026

HH-AKI – Background (2)

Measure Description: This measure assesses the number of inpatient hospitalizations for adult patients who experience a stage 2 or greater acute kidney injury (AKI) during their encounter. AKI stage 2 or greater is defined as a substantial increase in serum creatinine or initiation of kidney dialysis.

Rationale and Intent:

- Incidence of AKI in general hospitalized patients is 10 – 20%, and among critically ill patients, 45 – 50%. In cardiac surgery patients it ranges from 30 – 50%
- AKI may result in the need for dialysis and is associated with an increased risk of mortality
- A proportion of AKI cases are preventable and treatable, through careful management of hemodynamic status, fluids, and vasoactive medications

HH-AKI – Risk Adjustment

- Risk adjustment promotes fair and accurate comparison of health care outcomes across measured entities (e.g., hospitals)
- Risk adjustment controls for patient-level characteristics within the population of interest and outside of the hospital's control
- Patient-level characteristics may be:
  - Clinical (e.g., types, number, or severity of conditions)
  - Demographic (e.g., age, gender)
  - Functional (e.g., ability to walk)
  - Social (e.g., income, education, geography)

2024 vs 2025 Reporting Year (1)

Measure Components	2024 Reporting Year	2025 Reporting Year
Description	The proportion of inpatient hospitalizations for patients age 18 and older who have an acute kidney injury (stage 2 or greater) that occurred during the encounter. Acute kidney injury (AKI) stage 2 or greater is defined as a substantial increase in serum creatinine value, or by the initiation of kidney dialysis (continuous renal replacement therapy (CRRT), hemodialysis or peritoneal dialysis).	The ~~proportion~~ measure assesses the number of inpatient hospitalizations for patients age 18 and older who have an acute kidney injury (stage 2 or greater) that occurred during the encounter. Acute kidney injury (AKI) stage 2 or greater is defined as a substantial increase in serum creatinine value, or by the initiation of kidney dialysis (continuous renal replacement therapy (CRRT), hemodialysis or peritoneal dialysis).
Initial Population	Inpatient hospitalizations for patients age 18 and older without a diagnosis of obstetrics, 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 the encounter	Inpatient hospitalizations that end during the measurement period for patients 18 years of age ~~18 and~~or older without ~~a diagnosis of~~ 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 the ~~encounter~~hospitalization
Denominator	Equals Initial Population	No change

2024 vs 2025 Reporting Year (2)

Measure Components	2024 Reporting Year	2025 Reporting Year
Denominator Exclusions	Inpatient hospitalizations for patients with an increase in serum creatinine value of at least 0.3 mg/dL between the index serum creatinine and a subsequent serum creatinine taken within 48 hours of the encounter start. Inpatient hospitalizations for patients with the index eGFR value of <60 mL/min within 48 hours of the encounter start. Inpatient hospitalizations for patients who have less than two serum creatinine results within 48 hours of the encounter start. Inpatient hospitalizations for patients who have kidney dialysis (CRRT, hemodialysis or peritoneal dialysis) initiated 48 hours or less after the encounter start, and who do not have evidence of a 2 times increase in serum creatinine.	Inpatient hospitalizations for patients with an increase in serum creatinine value of at least 0.3 mg/dL between the index serum creatinine and a subsequent serum creatinine taken within 48 hours of the encounter start. Inpatient hospitalizations for patients with the index eGFR value of <60 mL/min within 48 hours of the encounter start. Inpatient hospitalizations for patients who have less than two serum creatinine results within the first 48 hours of the encounter start. Inpatient hospitalizations for patients who have kidney dialysis (CRRT, hemodialysis or peritoneal dialysis) initiated 48 hours or less after the encounter start, and who do not have evidence of a 2 times increase in serum creatinine.

2024 vs 2025 Reporting Year (2)

Measure Components	2024 Reporting Year	2025 Reporting Year
Denominator Exclusions *(cont.)*	Inpatient hospitalizations for patients with at least one specified diagnosis present on admission that puts them at extremely high risk for AKI: - Hemolytic Uremic Syndrome (HUS) - Large Body Surface Area (BSA) Burns - Traumatic Avulsion of Kidney - Rapidly Progressive Nephritic Syndrome - Thrombotic Thrombocytopenic Purpura Inpatient hospitalizations for patients who have at least one specified procedure during the encounter that puts them at extremely high risk for AKI: - Extracorporeal membrane oxygenation (ECMO) - Intra-Aortic Balloon Pump - Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) - Nephrectomy	Inpatient hospitalizations for patients with at least one specified diagnosis present on admission <u>during the encounter</u> that puts them at extremely high risk for AKI: - Hemolytic Uremic Syndrome (HUS) - Large Body Surface Area (BSA) Burns - Traumatic Avulsion of Kidney - Rapidly Progressive Nephritic Syndrome - Thrombotic Thrombocytopenic Purpura - <u>Out of Hospital Cardiac Arrest (OHCA)</u> Inpatient hospitalizations for patients who have at least one specified procedure <u>that starts</u> during the encounter that puts them at extremely high risk for AKI: - Extracorporeal membrane oxygenation (ECMO) - Intra-Aortic Balloon Pump - Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) - Nephrectomy

2024 vs 2025 Reporting Year (3)

Measure Components	2024 Reporting Year	2025 Reporting Year
Numerator	Inpatient hospitalizations for patients who develop AKI (stage 2 or greater) during the encounter, as evidenced by: A subsequent increase in serum creatinine value at least 2 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 (CRRT, hemodialysis or peritoneal dialysis) initiated more than 48 hours after the start of the encounter, and who do not have evidence of a 2 times increase in serum creatinine.	Inpatient hospitalizations for patients who develop AKI (stage 2 or greater) during the encounter, as evidenced by: A subsequent increase in serum creatinine value at least 2 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 (CRRT, hemodialysis or peritoneal dialysis) initiated more than 48 hours after the start of the encounter~~,~~ ~~and who do not have evidence~~. Evidence of a 2 times increase in serum creatinine is not required. Only one harm is counted per encounter.

2024 vs 2025 Reporting Year (4)

Measure Components	2024 Reporting Year	2025 Reporting Year
Risk Adjustment	Sex and Age First vital signs since the encounter start: - Temperature - Heart Rate - Respiratory Rate - Systolic Blood Pressure The estimated glomerular filtration rate (eGFR) calculated using the index serum creatinine, patient sex, and age-based formula. Patient sex collected for risk adjustment and to calculate the eGFR is determined by the AdministrativeGender codes 'F' (female) and 'M' (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.	Sex and Age. First vital signs since the encounter start: ~~- Temperature~~ - Heart Rate - Respiratory Rate - Systolic Blood Pressure - Temperature The estimated glomerular filtration rate (eGFR) which is calculated using the index serum creatinine, patient sex, and age-based formula. Patient sex collected for risk adjustment and to calculate the eGFR is determined by the AdministrativeGender codes 'F' (female) and 'M' (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.

2024 vs 2025 Reporting Year (5)

Measure Components	2024 Reporting Year	2025 Reporting Year
Risk Adjustment *(cont.)*	All encounter diagnoses along with their present on admission (POA) indicators are being collected for the development of baseline risk adjustment model. Targeted diagnoses at the time of development include: - Cancer (leukemia, lymphoma, or metastatic cancer) - Diabetes - Heart failure - Hypertension - Obesity Encounter length of stay Please see the Hospital Harm - Acute Kidney Injury Risk Adjustment Methodology Report on the eCQM-specific page on the eCQI Resource Center website: https://ecqi.healthit.gov/	All encounter diagnoses along with their present on admission (POA) indicators are being collected for the development of baseline risk adjustment model~~.~~ ~~Targeted~~ with initial focus on any encounter diagnoses ~~at the time of development include:~~ captured for: - Cancer (leukemia, lymphoma, or metastatic cancer) - Diabetes - Heart failure - Hypertension - Obesity Encounter length of stay. Please see the Hospital Harm - Acute Kidney Injury Risk Adjustment Methodology Report on the eCQM-specific page on the eCQI Resource Center website: https://ecqi.healthit.gov/

Frequently Asked Questions (FAQ)

Question:

Can we use a direct value for eGFR or is it mandatory to compute the value using the CKD-EPI creatinine equation mentioned in measure specification?

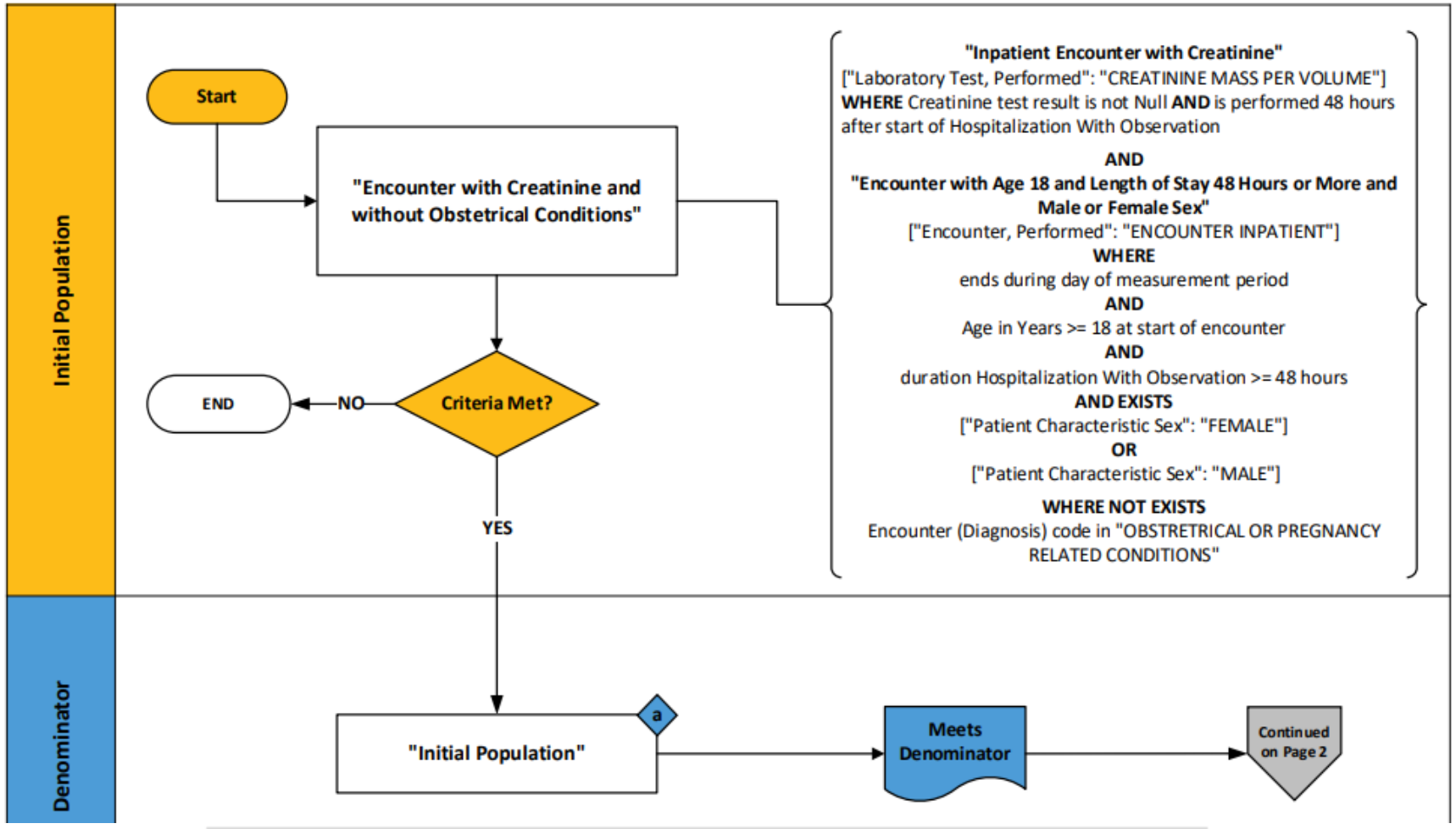
Answer:

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 (NKF) and American Society of Nephrology (ASN). This formula is a gender-specific, race-neutral formula.

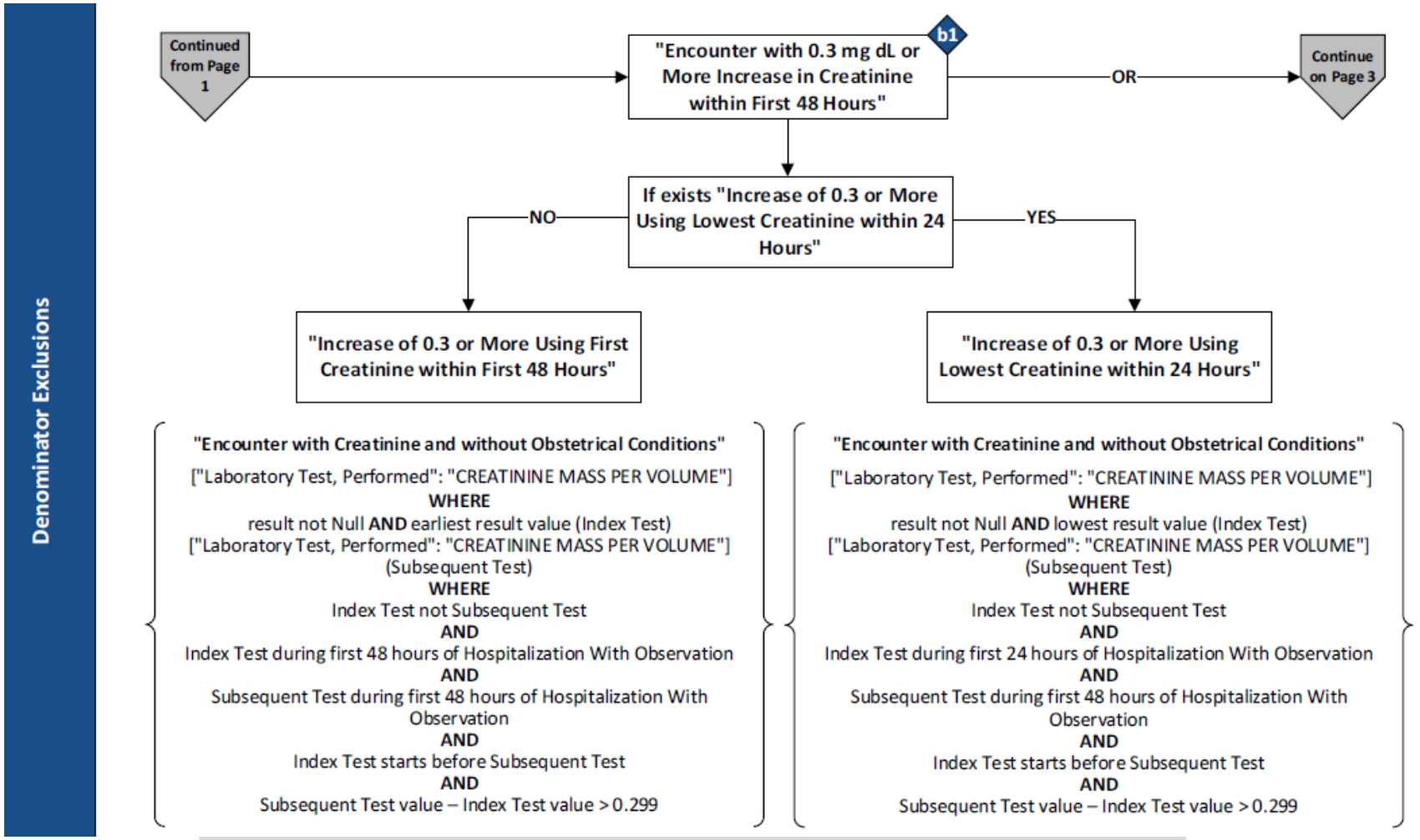
Hospital Harm – Acute Kidney Injury (HH-AKI) (CMS832v2)

Measure Flow

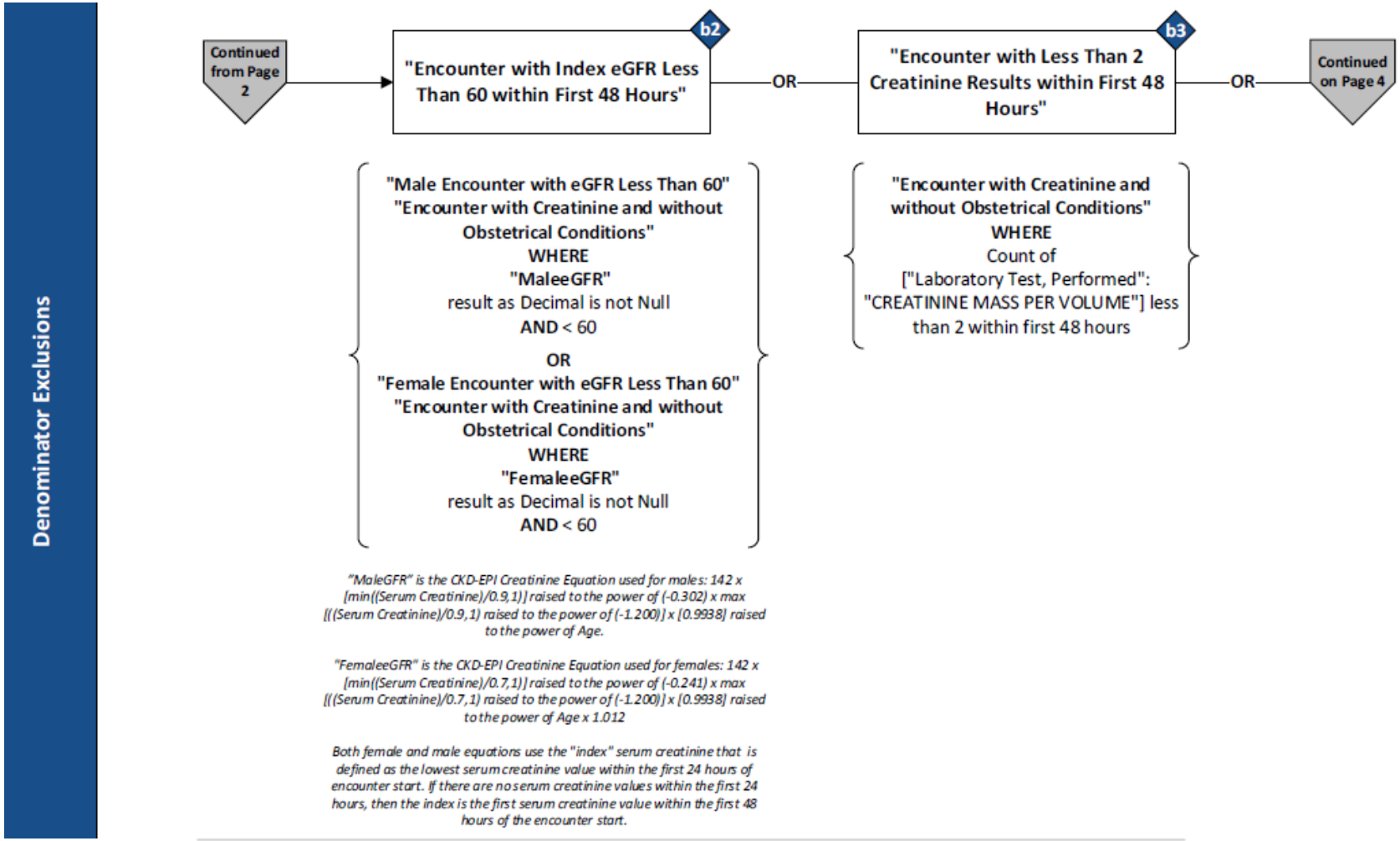
Initial Population and Denominator



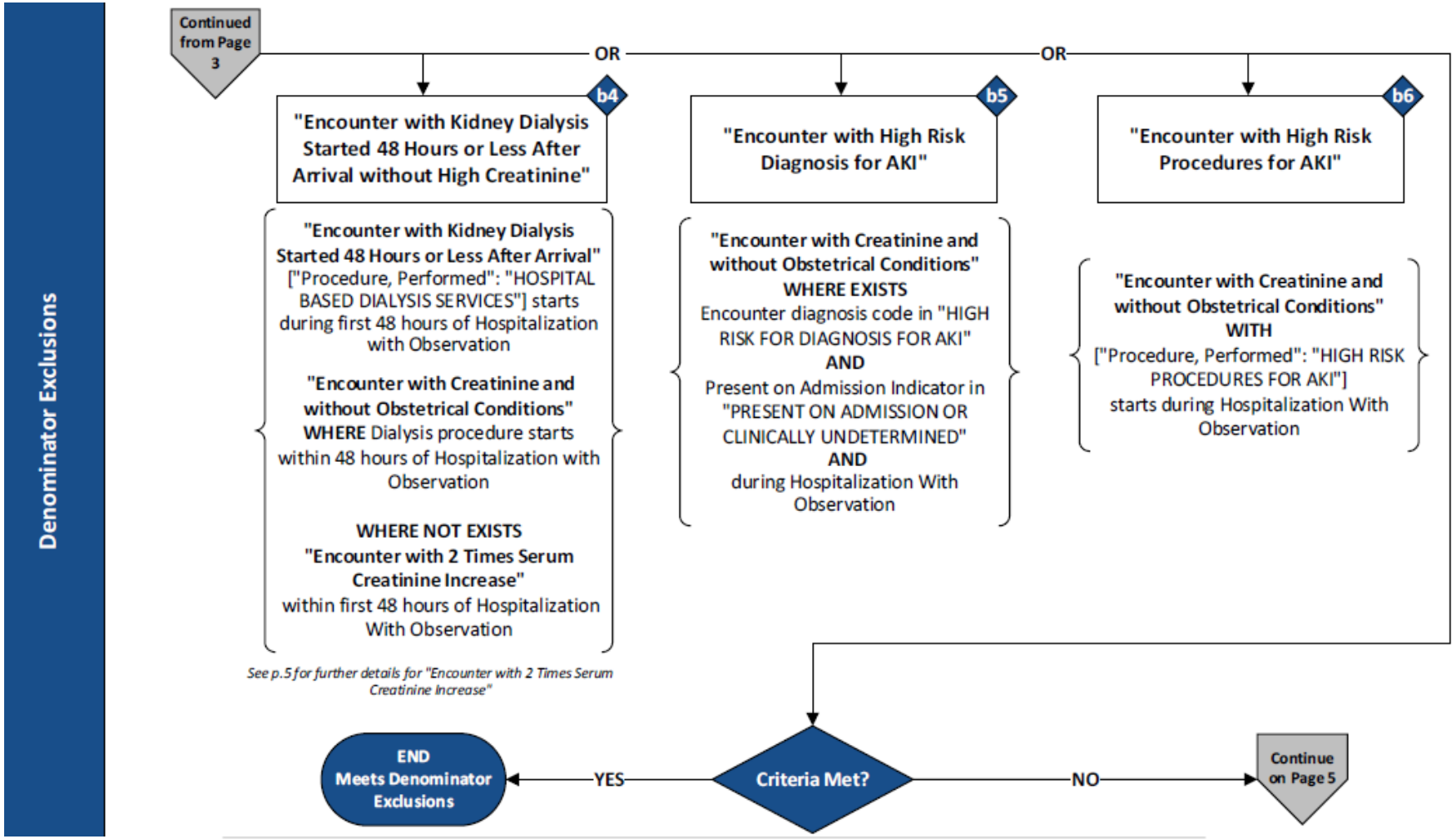
Denominator Exclusions (1)



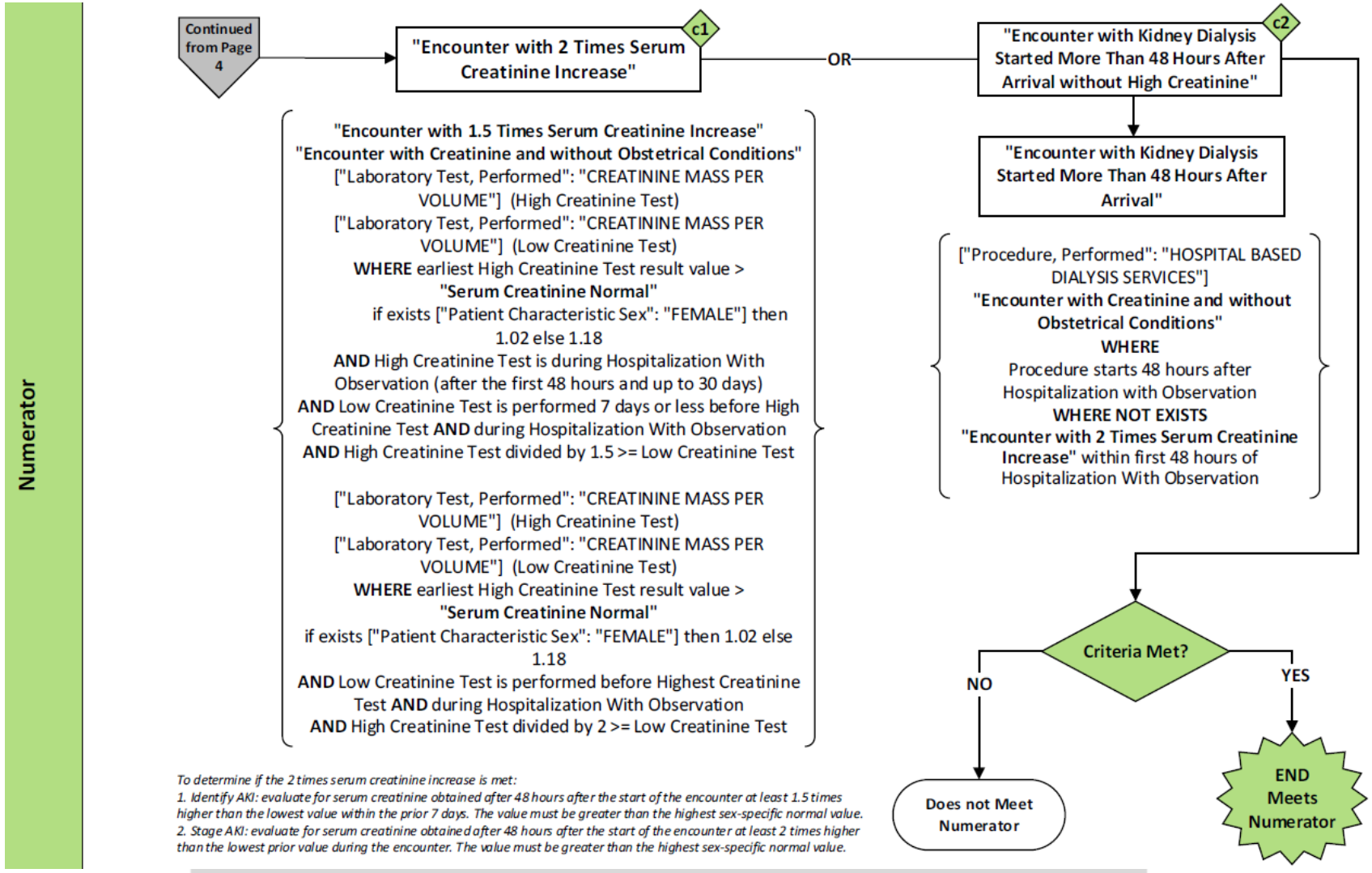
Denominator Exclusions (2)



Denominator Exclusions (3)



Numerator



Sample Calculation

Sample Calculation
$\text{Performance Rate} = \frac{\text{Numerator } (c1 + c2 = 20)}{\text{Denominator } (a = 100) - \text{Denominator Exclusions } (b1 + b2 + b3 + b4 + b5 + b6 = 20)} = 25\%$

Hospital Harm – Acute Kidney Injury (HH-AKI) (CMS832v2)

Logic Detail

HH-AKI Initial Population (1)

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 the hospitalization

Initial Population: "Encounter with Creatinine and without Obstetrical Conditions"

HH-AKI Initial Population (2)

Initial Population: “Encounter with Creatinine and without Obstetrical Conditions”

Encounter with Creatinine and without Obstetrical Conditions

```
"Inpatient Encounter with Creatinine" EncounterWithCreatinine
  where not exists ( EncounterWithCreatinine.diagnoses EncounterDiagnoses
      where EncounterDiagnoses.code in “~~Obstetrical and VTE Obstetrics~~Obstetrical or Pregnancy Related Conditions"
  )
```

Inpatient Encounter with Creatinine

```
from
  "Encounter with Age 18 and Length of Stay 48 Hours or More and Male or Female Sex”
Encounter48Hours,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] CreatinineTest
  let HospitalizationPeriod: Global."HospitalizationWithObservation" ( Encounter48Hours ),
  ~~CreatinineTestStart~~CreatinineTestTime: Global. "EarliestOf" ( CreatinineTest.relevantDatetime,
CreatinineTest.relevantPeriod )
  where CreatinineTest.result is not null
    and ~~CreatinineTestStart during Hospitalization Period
    and CreatinineTestStart~~CreatinineTestTime during Interval[start of HospitalizationPeriod + 48 hours,
end of HospitalizationPeriod]
  return Encounter48Hours
```

HH-AKI Initial Population (3)

Initial Population: “Inpatient Encounter with Creatinine”

Encounter with Age 18 and Length of Stay 48 Hours or More and Male or Female Sex

```
["Encounter, Performed": "Encounter Inpatient"] InpatientEncounter
  where InpatientEncounter.relevantPeriod ends during day of "Measurement Period"
    and AgeInYearsAt(date from start of InpatientEncounter.relevantPeriod) >=18
    and duration in hours of Global."HospitalizationWithObservation" ( InpatientEncounter ) >= 48
    and exists ( ( ["Patient Characteristic Sex": "Female"] )
        union ( ["Patient Characteristic Sex": "Male"] )
    )
```

HH-AKI Denominator

Equals Initial Population

Denominator: “Encounters with Creatinine and without Obstetric Conditions”

HH-AKI Denominator Exclusions (1)

Inpatient hospitalizations for patients with an increase in serum creatinine value of at least 0.3 mg/dL between the index serum creatinine and a subsequent serum creatinine taken within 48 hours of the encounter start.

Inpatient hospitalizations for patients with the index eGFR value of <60 mL/min within 48 hours of the encounter start.

Inpatient hospitalizations for patients who have less than two serum creatinine results within the first 48 hours of the encounter start.

Inpatient hospitalizations for patients who have kidney dialysis (CRRT, hemodialysis or peritoneal dialysis) initiated 48 hours or less after the encounter start, and who do not have evidence of a 2 times increase in serum creatinine.

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:

- Hemolytic Uremic Syndrome (HUS)
- Large Body Surface Area (BSA) Burns
- Traumatic Avulsion of Kidney
- Rapidly Progressive Nephritic Syndrome
- Thrombotic Thrombocytopenic Purpura
- Out of Hospital Cardiac Arrest (OHCA)

Inpatient hospitalizations for patients who have at least one specified procedure that starts during the encounter that puts them at extremely high risk for AKI:

- Extracorporeal membrane oxygenation (ECMO)
- Intra-Aortic Balloon Pump
- Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA)
- Nephrectomy

HH-AKI Denominator Exclusions (2)

Denominator Exclusions:

"Encounter with 0.3 mg dL or More Increase in Creatinine within First 48 Hours"
union "Encounter with Index eGFR Less Than 60 within First 48 Hours"
union "Encounter with Less Than 2 Creatinine Results within First 48 Hours ~~of Arrival~~"
union "Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival without High Creatinine"
union "Encounter with High Risk Diagnosis for AKI"
union "Encounter with High Risk Procedures for AKI"

HH-AKI Denominator Exclusions (3)

Denominator Exclusions: "Encounter with 0.3 mg dL or More Increase in Creatinine within First 48 Hours"

Encounter with 0.3 mg dL or More Increase in Creatinine within First 48 Hours

if exists "Increase of 0.3 or More Using Lowest Creatinine within 24 Hours" then "Increase of 0.3 or More Using Lowest Creatinine within 24 Hours"

else ~~if exists~~ "Increase of 0.3 or More Using First Creatinine within First 48 Hours" ~~then "Increase of 0.3 or More Using First Creatinine within First 48 Hours"~~

~~else null~~

HH-AKI Denominator Exclusions (4)

Denominator Exclusions: "Encounter with 0.3 mg dL or More Increase in Creatinine within First 48 Hours"

Increase of 0.3 or More Using Lowest Creatinine within 24 Hours

```
from
  "Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] IndexCreatinineLabResult,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] SubsequentCreatinineLabResult
  let IndexCreatinineLabResultTime: Global."EarliestOf" ( IndexCreatinineLabResult.relevantDatetime,
IndexCreatinineLabResult.relevantPeriod ),
  SubsequentCreatinineLabResultTime: Global."EarliestOf" ( SubsequentCreatinineLabResult.relevantDatetime,
SubsequentCreatinineLabResult.relevantPeriod ),
  HospitalWithObservation: Global."HospitalizationWithObservation" ( QualifyingEncounter )
  where ( SubsequentCreatinineLabResult.result.value ) - ( IndexCreatinineLabResult.result.value ) > 0.299
    and IndexCreatinineLabResult.result.value = "LowestSerumCreatinine"(QualifyingEncounter)
    and IndexCreatinineLabResultTime during Interval[SubsequentCreatinineLabResultTime - 48 hours,
SubsequentCreatinineLabResultTime]
    and IndexCreatinineLabResultTime during HospitalWithObservation
    and IndexCreatinineLabResultTime during Interval[start of HospitalWithObservation, start of HospitalWithObservation
+ 24 hours]
    and SubsequentCreatinineLabResultTime during HospitalWithObservation
    and SubsequentCreatinineLabResultTime during Interval[start of HospitalWithObservation, start of
HospitalWithObservation + 48 hours]
    and IndexCreatinineLabResult.id != SubsequentCreatinineLabResult.id
  return QualifyingEncounter
```

HH-AKI Denominator Exclusions (5)

Denominator Exclusions: "Encounter with 0.3 mg dL or More Increase in Creatinine within First 48 Hours"

Increase of 0.3 or More Using First Creatinine within First 48 Hours

```
from
  "Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] IndexCreatinineLabResult,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] SubsequentCreatinineLabResult
  let IndexCreatinineLabResultTime: Global."EarliestOf" ( IndexCreatinineLabResult.relevantDatetime,
IndexCreatinineLabResult.relevantPeriod ),
  SubsequentCreatinineLabResultTime: Global."EarliestOf" ( SubsequentCreatinineLabResult.relevantDatetime,
SubsequentCreatinineLabResult.relevantPeriod ),
  HospitalWithObservation: Global."HospitalizationWithObservation" ( QualifyingEncounter )
  where ( SubsequentCreatinineLabResult.result.value ) - ( IndexCreatinineLabResult.result.value ) > 0.299
    and IndexCreatinineLabResult.result.value = "EarliestSerumCreatinine"(QualifyingEncounter)
    and IndexCreatinineLabResultTime during Interval[SubsequentCreatinineLabResultTime - 48 hours,
SubsequentCreatinineLabResultTime]
    and IndexCreatinineLabResultTime during HospitalWithObservation
    and SubsequentCreatinineLabResultTime during Interval[start of HospitalWithObservation, start of HospitalWithObservation + 48 hours]
    and SubsequentCreatinineLabResultTime during HospitalWithObservation
    and IndexCreatinineLabResultTime during Interval[start of HospitalWithObservation, start of HospitalWithObservation + 48 hours]
    and SubsequentCreatinineLabResultTime during Interval[start of HospitalWithObservation, start of HospitalWithObservation + 48 hours]
    and IndexCreatinineLabResult.id != SubsequentCreatinineLabResult.id
  return QualifyingEncounter
```

HH-AKI Denominator Exclusions (6)

Denominator Exclusions: "Encounter with Index eGFR Less Than 60 within First 48 Hours"

Encounter with Index eGFR Less Than 60 within First 48 Hours

"Male Encounter with eGFR Less Than 60"
union "Female Encounter with eGFR Less Than 60"

Male Encounter with eGFR Less Than 60

"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
where "MaleeGFR"(QualifyingEncounter) is not null
and "MaleeGFR"(QualifyingEncounter) as Decimal < 60

Female Encounter with eGFR Less Than 60

"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
where "FemaleeGFR"(QualifyingEncounter) is not null
and "FemaleeGFR"(QualifyingEncounter) as Decimal < 60

HH-AKI Denominator Exclusions (7)

Denominator Exclusions: "Encounter with Less Than 2 Creatinine Results within First 48 Hours ~~of Arrival~~"

Encounter with Less Than 2 Creatinine Results within First 48 Hours ~~of Arrival~~

"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
where (Count("CreatinineLabTestwithResultwithinFirst48Hours"(QualifyingEncounter)) < 2)

HH-AKI Denominator Exclusions (8)

Denominator Exclusions: "Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival without High Creatinine"

Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival without High Creatinine

```
"Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival"
EncounterWithKidneyDialysis48HoursOrAfter
  where not ( exists ( "Encounter with 2 Times Serum Creatinine Increase" EncounterWithHighCreatinine
        where ( EncounterWithHighCreatinine.relevantPeriod includes
EncounterWithKidneyDialysis48HoursOrAfter.relevantPeriod )
    )
  )
```

Encounter with Kidney Dialysis Started 48 Hours or Less After Arrival

```
from
  ["Procedure, Performed": "Hospital Based Dialysis Services"] Dialysis,
  "Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  where Global."NormalizeInterval" ( Dialysis.relevantDatetime, Dialysis.relevantPeriod ) starts during
Interval[start of Global."HospitalizationWithObservation" ( QualifyingEncounter ) + 48 hours, end of
Global."HospitalizationWithObservation" ( QualifyingEncounter )]
    and Global."NormalizeInterval" ( Dialysis.relevantDatetime, Dialysis.relevantPeriod ) starts during
Global."HospitalizationWithObservation" ( QualifyingEncounter )
  return QualifyingEncounter
```

HH-AKI Denominator Exclusions (9)

Denominator Exclusions: "Encounter with High Risk Diagnosis for AKI"

Encounter with High Risk Diagnosis for AKI

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  where exists ( QualifyingEncounter.diagnoses HighRiskforAKI
      where HighRiskforAKI.code in "High Risk Diagnosis for AKI"
        and HighRiskforAKI.presentOnAdmissionIndicator in "Present on Admission or Clinically
Undetermined"
  )
    and QualifyingEncounter.relevantPeriod during Global."HospitalizationWithObservation" (
QualifyingEncounter )
```

HH-AKI Denominator Exclusions (10)

Denominator Exclusions: "Encounter with High Risk Procedures for AKI"

Encounter with High Risk Procedures for AKI

"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
with ["Procedure, Performed": "High Risk Procedures for AKI"] HighRiskProcedures
such that Global."NormalizeInterval" (HighRiskProcedures.relevantDatetime,
HighRiskProcedures.relevantPeriod) starts during Global."HospitalizationWithObservation" (
QualifyingEncounter)

HH-AKI Numerator (1)

Inpatient hospitalizations for patients who develop AKI (stage 2 or greater) during the encounter, as evidenced by:

A subsequent increase in serum creatinine value at least 2 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 (CRRT, hemodialysis or peritoneal dialysis) initiated more than 48 hours after the start of the encounter~~, and who do not have evidence~~. Evidence of a 2 times increase in serum creatinine is not required.

Only one harm is counted per encounter.

Numerator: "Encounter with 2 Times Serum Creatinine Increase"
union "Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival without High Creatinine"

HH-AKI Numerator (2)

Numerator: “Encounter with 2 Times Serum Creatinine Increase”

Encounter with 2 Times Serum Creatinine Increase

```
from
  "Encounter with 1.5 Times Serum Creatinine Increase" EncounterWithHighCreatinine,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] HighCreatinineTest,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] LowCreatinineTest
  let LowCreatinineTestTime: Global."EarliestOf" ( LowCreatinineTest.relevantDatetime,
LowCreatinineTest.relevantPeriod ),
  HighCreatinineTestTime: Global."EarliestOf" ( HighCreatinineTest.relevantDatetime,
HighCreatinineTest.relevantPeriod ),
  HospitalWithObservation: Global."HospitalizationWithObservation" ( EncounterWithHighCreatinine )
  where ( HighCreatinineTest.result.value > "Serum Creatinine Normal" )
    and HighCreatinineTest.result.value = "HighestSerumCreatinine"( EncounterWithHighCreatinine )
    and LowCreatinineTest.result.value = "LowestSerumCreatinine"( EncounterWithHighCreatinine )
    and "2.0IncreaseInCreatinine"( EncounterWithHighCreatinine ) >= LowCreatinineTest.result.value
    and LowCreatinineTestTime before HighCreatinineTestTime
    and LowCreatinineTestTime during HospitalWithObservation
    and HighCreatinineTestTime during Interval[start of HospitalWithObservation + 48 hours, start of
     HospitalWithObservation + 30 days]
    and HighCreatinineTestTime during HospitalWithObservation
  return EncounterWithHighCreatinine
```

HH-AKI Numerator (3)

Numerator: “Encounter with 1.5 Times Serum Creatinine Increase”

Encounter with 1.5 Times Serum Creatinine Increase

```
from
  "Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] HighCreatinineTest,
  ["Laboratory Test, Performed": "Creatinine Mass Per Volume"] LowCreatinineTest
  let LowCreatinineTestTime: Global."EarliestOf" ( LowCreatinineTest.relevantDatetime,
LowCreatinineTest.relevantPeriod ),
  HighCreatinineTestTime: Global."EarliestOf" ( HighCreatinineTest.relevantDatetime,
HighCreatinineTest.relevantPeriod ),
  HospitalWithObservation: Global."HospitalizationWithObservation" ( QualifyingEncounter )
  where ( HighCreatinineTest.result.value > "Serum Creatinine Normal" )
    and HighCreatinineTest.result.value = "HighestSerumCreatinine"( QualifyingEncounter )
    and LowCreatinineTest.result.value = "LowestSerumCreatinine"( QualifyingEncounter )
    and "1.5IncreaseInCreatinine"( QualifyingEncounter ) >= LowCreatinineTest.result.value
    and LowCreatinineTestTime 7 days or less before HighCreatinineTestTime
    and LowCreatinineTestTime during HospitalWithObservation
    and HighCreatinineTestTime during Interval[start of HospitalWithObservation + 48 hours, start of
HospitalWithObservation      + 30 days]
    and HighCreatinineTestTime during HospitalWithObservation
  return QualifyingEncounter
```

HH-AKI Numerator (4)

Numerator: “Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival without High Creatinine”

Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival without High Creatinine

```
"Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival"
EncounterWithDialysisAfter48Hours
  where not ( exists ( "Encounter with 2 Times Serum Creatinine Increase" EncounterWithHighCreatinine
        where ( EncounterWithHighCreatinine.relevantPeriod includes
EncounterWithDialysisAfter48Hours.relevantPeriod )
    )
  )
```

Encounter with Kidney Dialysis Started More Than 48 Hours After Arrival

```
from
  ["Procedure, Performed": "Hospital Based Dialysis Services"] Dialysis,
  "Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  where Global."NormalizeInterval" ( Dialysis.relevantDatetime, Dialysis.relevantPeriod ) starts during Interval[start
of Global."HospitalizationWithObservation" ( QualifyingEncounter ) + 48 hours, end of
Global."HospitalizationWithObservation" ( QualifyingEncounter )]
    and Global."NormalizeInterval" ( Dialysis.relevantDatetime, Dialysis.relevantPeriod ) starts during
Global."HospitalizationWithObservation" ( QualifyingEncounter )
  return QualifyingEncounter
```

HH-AKI Risk Adjustment Variables (1)

Risk Adjustment: “Risk Variable All Encounter Diagnoses with POA Indication”

Risk Variable All Encounter Diagnoses with POA Indicator

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  return Tuple {
    encounterId: QualifyingEncounter.id,
    diagnosiscode: QualifyingEncounter.diagnoses.code,
    POA: QualifyingEncounter.diagnoses.presentOnAdmissionIndicator
  }
```

Risk Adjustment: “Risk Variable Estimated Glomerular Filtration Rate for Females”

Risk Variable Estimated Glomerular Filtration Rate for Females

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  return Tuple {
    encounterId: QualifyingEncounter.id,
    eGFR: "FemaleeGFR"(QualifyingEncounter)
  }
```

HH-AKI Risk Adjustment Variables (2)

Risk Adjustment: “Risk Variable Estimated Glomerular Filtration Rate for Males”

Risk Variable Estimated Glomerular Filtration Rate for Males

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  return Tuple {
    encounterId: QualifyingEncounter.id,
    eGFR: “MaleeGFR"(QualifyingEncounter)
  }
```

Risk Adjustment: “Risk Variable First Heart Rate”

Risk Variable First Heart Rate

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  return Tuple {
    encounterId: QualifyingEncounter.id,
    firstHeartRate: "FirstHeartRate"(QualifyingEncounter)
  }
```

HH-AKI Risk Adjustment Variables (3)

Risk Adjustment: “Risk Variable First Respiratory Rate in Encounter”

Risk Variable First Respiratory Rate in Encounter

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  return Tuple {
    encounterId: QualifyingEncounter.id,
    firstRespiratoryRate: "FirstRespiratoryRate"(QualifyingEncounter)
  }
```

Risk Adjustment: “Risk Variable First Systolic Blood Pressure in Encounter”

"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter

```
  return Tuple {
    encounterId: QualifyingEncounter.id,
    firstSystolicBP: "FirstSystolicBloodPressure"(QualifyingEncounter)
  }
```

Risk Adjustment: “Risk Variable First Temperature in Encounter”

Risk Variable First Respiratory Rate in Encounter

```
"Encounter with Creatinine and without Obstetrical Conditions" QualifyingEncounter
  return Tuple {
    encounterId: QualifyingEncounter.id,
    firstTemperature: "FirstBodyTemperature"(QualifyingEncounter)
  }
```

Hospital Harm – Acute Kidney Injury (HH-AKI) (CMS832v2)

Known Issue

2025 eCQM Known Issue- EKI-35 (1)

A known issue for CMS832v2 was posted to the eCQM Known Issues Project on December 17, 2024

Key	Description	Solution	Year	Links
EKI-35	**eCQM Impacted** – CMS832v2: Hospital Harm – Acute Kidney Injury **Issue** – The measure intent and numerator logic are not in alignment specific to the evaluation of patients with a hospital harm acute kidney injury (AKI) stage 2 or greater based on an increase in serum creatinine. The logic evaluates only the highest and lowest serum creatinine values, obtained during the encounter, to determine if there is evidence of AKI stage 2 or greater. 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, whichever is sooner. This error leads to patients not meeting the numerator criteria, and as a result, undercounting cases that meet the numerator.	There is no solution for CMS832v2 for 2025 reporting. Follow the current measure logic, as specified, for CMS832v2.	2025	CQM-7220

2025 eCQM Known Issue- EKI-35 (2)

Figure 1: Impact of evaluating only the lowest overall serum creatinine value

Scenario does not meet but should meet the evaluation criteria for a 1.5 and 2 times increase in serum creatinine.

	Index Creatinine		AKI Evaluation Period													
Inpatient Hospitalization Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Serum Creatinine Values	0.9	1.0	1.13	1.9	-	-	-	-	-	-	-	1.5	-	-	0.8	0.8

Result based on current logic: The encounter fails to meet the 1.5 and 2 times increase because the lowest overall value is not prior to the overall highest value. In the scenario, the lowest overall value, 0.8, occurs on day 16 and is denoted by the red box. The highest overall value, 1.9, occurs on day 4, found within the green box. Because the lowest overall value does not occur within the 7 days prior to the highest value, this example does not meet the numerator criteria.

Measure intent: Based on measure intent, the encounter should meet the numerator criteria. Value 1.9 on day 4 represents a 1.5 times increase in serum creatinine from the lowest value within the prior 7 days, 0.9 on day 1, and a 2 times increase over the lowest prior value. Though value 0.9 on day 1 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 2 times increase.

2025 eCQM Known Issue- EKI-35 (3)

Figure 2: Impact of evaluating only the highest overall serum creatinine value

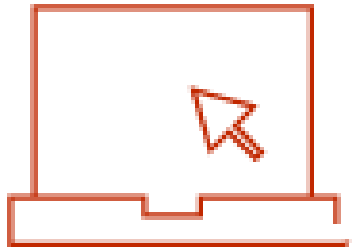
Scenario does not meet but should meet the evaluation criteria for a 1.5 and 2 times increase in serum creatinine.

	Index Creatinine		AKI Evaluation Period												
Inpatient Hospitalization Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Serum Creatinine Values	0.9	0.8	-	-	0.6	-	1.3	1.1	-	-	-	1.2	-	1.6	-

Result based on current logic: The encounter fails to meet the 1.5 and 2 times increase because the highest overall value does not represent a 1.5 times increase from any value within the prior 7 days. In the scenario, the highest overall value is 1.6 on day 14 and the lowest overall value is 0.6 on day 5. Because the lowest value is more than 7 days prior to the highest, this scenario does not meet the numerator criteria.

Measure intent: The encounter should meet the numerator criteria. The second highest value, 1.3 on day 7, represents a 1.5 times increase from the lowest value within the prior 7 days, 0.6 on day 5. The current measure logic misses the value of 1.3 from inclusion in the calculation because this is neither the highest nor lowest value in the set. In addition, this value also meets the threshold for AKI stage 2 or greater because the value on day 7 is 2 times greater than the value on day 5.

Resources

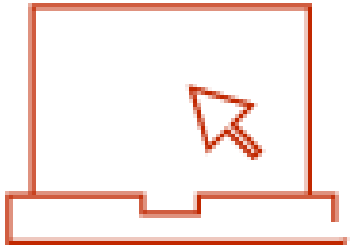


eCQI Resource Center

CMS EH Measures
https://ecqi.healthit.gov/eligible-hospital/critical-access-hospital-eCQMs
Get Started with eCQMs
https://ecqi.healthit.gov/ecqms?qt-tabs_ecqm=education

Teach Me Clinical Quality Language (CQL) Video Series -
https://ecqi.healthit.gov/cql?qt-tabs_cql=2
Hospitalization with Observation -
https://www.youtube.com/watch?v=3yqwOU2XcZM&ab_channel=CMSHHSgov
What is a Value Set -
https://register.gotowebinar.com/recording/4766956164118938369

Resources (2)



Value Set Authority Center (VSAC) Support - https://www.nlm.nih.gov/vsac/support/index.html

Pioneers In Quality - https://www.jointcommission.org/measurement/pioneers-in-quality/

Expert to Expert - https://www.jointcommission.org/measurement/quality-measurement-webinars-and-videos/expert-to-expert-webinars/

ASTP/ONC Issue Tracking System - https://oncprojectracking.healthit.gov/

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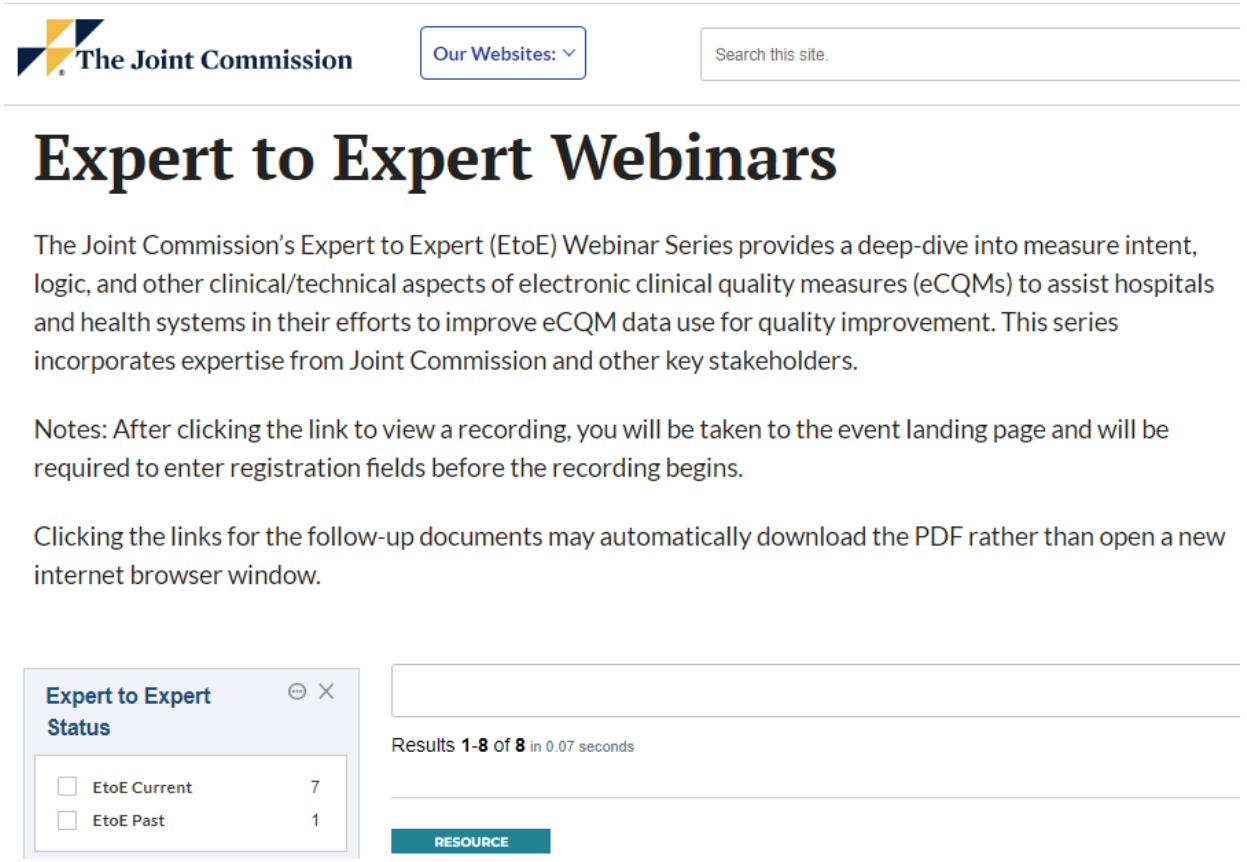
- Please submit questions via the question pane
- Click the Question mark icon in the toolbar
- Type and submit your question
- Include slide reference number when possible
- All questions **not answered verbally** during the live event will be addressed in a **written follow-up Q&A document**
- The follow-up document will be posted to the Joint Commission website several weeks after the live event

Webinar recording

All Expert to Expert webinar recording links, slides, transcripts, and Q&A documents can be accessed within several weeks of the live event on the Joint Commission's webpage via this link:

https://www.jointcommission.org/measurement/quality-measurement-webinars-and-videos/expert-to-expert-webinars/



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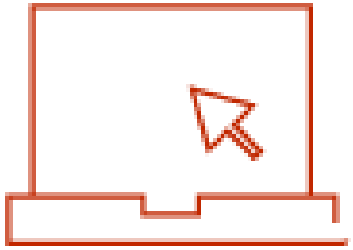

https://www.jointcommission.org/measurement/quality-measurement-webinars-and-videos/expert-to-expert-webinars/

Acronyms

Acronym	
AKI	Acute Kidney Injury
CE	Continuing Education
CMS	Centers for Medicare& Medicaid Services
eCQM	Electronic Clinical Quality Measure
ED	Emergency Department
eGFR	Estimated Glomerular Filtration Rate
EH	Eligible Hospital
EHR	Electronic Health Record
HH	Hospital Harm
VOIP	Voice Over IP Phone