

# Pioneers in Quality Expert to Expert Webinar Series

## 2022 eCQM Annual Updates

On Demand Webinar

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March 14, 2022 – April 25, 2022



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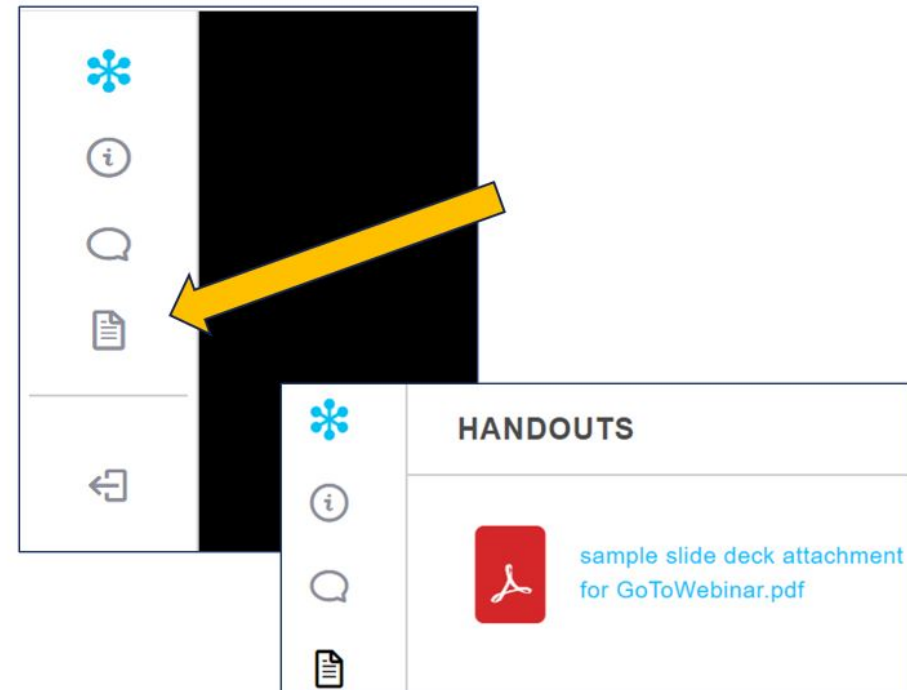
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# Expert to Expert Webinar Series

## eCQM Annual Updates Webinars

- VTE Measures
- Stroke Measures
- PC-05 Exclusive Breast Milk Feeding
- ED-2 Median Admit Decision Time to ED Departure Time
- Safe Use of Opioids- Concurrent Prescribing
- Joint Commission-only ePC measures (PC-01, 02, 06)

## New Measure Review Webinars

- Hospital Harm - Severe Hypoglycemia
- Hospital Harm - Severe Hyperglycemia
- Joint Commission-only PC-07 Severe Obstetric Complications eCQM

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# Resources

## eCQI Resource Center – EH Measures:

<https://ecqi.healthit.gov/eligible-hospital/critical-access-hospital-ecqms>

## Pioneers In Quality

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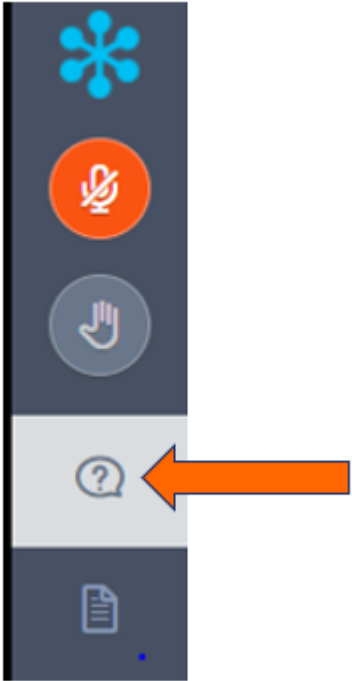
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<https://www.jointcommission.org/measurement/quality-measurement-webinars-and-videos/>

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- Please submit questions via the question pane
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- A panel will open for you to 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



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## Pioneers in Quality Expert to Expert Series

The Joint Commission's Expert to Expert Webinar Series provides a deep-dive into measure intent, logic, and other clinical/technical aspects of electronic clinical quality measures (eCQMs) to assist hospitals and health systems in their efforts to improve eCQM data use for quality improvement. This series incorporates expertise from Joint Commission and other key stakeholders. Click the button below to be taken to additional information about current and previous Expert to Expert webinars.

Measurement webinars

## Coming Soon – Expert to Expert Webinars

- Webinar series began Dec 9 that incorporates expertise from The Joint Commission, Centers for Medicare & Medicaid Services, Mathematica, and Lantana to address the 2022 eCQM Annual Updates for: VTE, STK, PC, ED, and Safe Opioid Use measures.
- A new measure review webinar is also planned in February for new Hypoglycemia and Hyperglycemia eCQMs.
- Additional information will be available at this link as each webinar is offered:

<https://www.jointcommission.org/measurement/pioneers-in-quality/pioneers-in-quality-expert-to-expert-series/>





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# Thank you for attending!



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## Pioneers in Quality Expert to Expert Webinar Series

# ED-2- Median Admit Decision Time to ED Departure for Admitted Patients (CMS111v10)

Angela Flanagan, MSN, RN, CPHIMS

January 25, 2022



# Pioneers in Quality Expert to Expert Webinar

## Agenda:

- Brief Introduction to ED-2
- Review changes made to ED-2
- Discuss frequently asked questions
- Facilitated Audience Q&A Segment

# Technical Overview

## ED-2- Median Admit Decision Time to ED Departure for Admitted Patients (CMS111v10)

# ED-2 Measure Description

Median time (in minutes) from admit decision time to time of departure from the emergency department for emergency department patients admitted to inpatient status



# Logic Changes Specific to ED-2 version 10

- Shortened the names of definition statements to improve readability  
AdmitDecisionUsingAssessmentDuringLastEDBeforeDeparture to  
AdmitDecisionUsingAssessment  
AdmitDecisionUsingEncounterOrderDuringLastEDandBeforeDeparture to  
AdmitDecisionUsingEncounterOrder
- Added a “let” clause to AdmitAssessment to streamline logic:  
“AdmitDecisionUsingAssessmentDuringLastEDBeforeDeparture”(EncounterInpatient  
)
- Removed the word “from” and added parentheses to group logic in the ED Encounter  
with Decision to Admit definition
- Updated Global.“Inpatient Encounter” definition by adding “day of”

# Changes Specific to ED-2 version 10 (Continued)

- Added new NormalizeInterval function to timing attributes
- Relocated the “EDEvaluation.result” in “Admit Inpatient” clause in the logic
- Revised the approach for identifying the location period end date by adding the Global.“HasEnd” function

# Value Set Changes Specific to ED-2 version 10

Based on expert review and public feedback, changes were made to the following value sets

- Decision to Admit to Hospital Inpatient (2.16.840.1.113883.3.117.1.7.1.295)
- Psychiatric/Mental Health Diagnosis (2.16.840.1.113883.3.117.1.7.1.299)
- Admit Inpatient (2.16.840.1.113762.1.4.1111.164)

# ED-2 Continuous Variable Measure

1. Episodes of care are classified using the initial population (IP) criteria, and those satisfying the criteria are included in the IP.
2. The IP members are classified using the measure population criteria and those satisfying the criteria are included in the measure population.
3. Each member of the measure population is evaluated according to the measure observations criteria and these results are aggregated using the specified operator.



$$\frac{\text{ED Discharge datetime} - \text{ED Admission datetime}}{\text{duration in minutes}} \quad \boxed{\text{OBSERVATION}}$$

# Aggregation Calculations

Calculate the ED encounter duration in minutes for each ED encounter in the measure population; report the median time for all calculations performed.

Departure time from ED minus Decision to Admit to Inpatient time

Encounter Minutes

Encounter 1: 60

Encounter 2: 120

**Encounter 3: 240** (median time - duration in minutes)

Encounter 4: 300

Encounter 5: 360

# Initial Population Logic

## Initial Population

### “ED Encounter with Decision to Admit”

Global."Inpatient Encounter" EncounterInpatient

let LastEDVisit: LastEDEncounter(EncounterInpatient),

AdmitAssessment: "AdmitDecisionUsingAssessment"(EncounterInpatient)

where (Global."NormalizeInterval" (AdmitAssessment.relevantDatetime,  
AdmitAssessment.relevantPeriod ) starts during LastEDVisit.relevantPeriod

or ("AdmitDecisionUsingEncounterOrder"(EncounterInpatient).authorDatetime during  
LastEDVisit.relevantPeriod ))

and exists (LastEDVisit.facilityLocations Location

where Location.code in "Emergency Department Visit"

and Global."HasEnd" (Location.locationPeriod))

# “ED Encounter with Decision to Admit” Inpatient Define and Function Expressions

## Global.Inpatient Encounter

["Encounter, Performed": "Encounter Inpatient"] EncounterInpatient

where "LengthInDays"(EncounterInpatient.relevantPeriod)<= 120

and EncounterInpatient.relevantPeriod ends during day of "Measurement Period“

## Global.LengthInDays(Value Interval<DateTime>)

difference in days between start of Value and end of Value

# “ED Encounter with Decision to Admit” ED Functions

**LastEDEncounter(EncounterInpatient "Encounter, Performed")**

Last(**Global."ED Encounter"** EDVisit

where EDVisit.relevantPeriod ends 1 hour or less before or on start of  
EncounterInpatient.relevantPeriod

sort by end of relevantPeriod ascending)

**Global.ED Encounter**

["Encounter, Performed": "Emergency Department Visit"]



# “ED Encounter with Decision to Admit”

## Admit Assessment Definition & Functions

**AdmitDecisionUsingAssessment(EncounterInpatient "Encounter, Performed")**

Last(["Assessment, Performed": "Emergency Department Evaluation"]) EDEvaluation

let LastEDVisit: "LastEDEncounter"(EncounterInpatient)

where EDEvaluation.result in "Admit Inpatient"

and Global."NormalizeInterval"(EDEvaluation.relevantDatetime,  
EDEvaluation.relevantPeriod) starts during LastEDVisit.relevantPeriod

and Global."NormalizeInterval"(EDEvaluation.relevantDatetime,  
EDEvaluation.relevantPeriod) starts before or on "EDDepartureTime"(LastEDVisit)

sort by start of Global."NormalizeInterval"(relevantDatetime, relevantPeriod))

# “ED Encounter with Decision to Admit” Assessment Functions

**LastEDEncounter("Encounter, Performed")**

Last(**Global."ED Encounter"** EDVisit

where EDVisit.relevantPeriod ends 1 hour or less before or on start of  
EncounterInpatient.relevantPeriod

sort by end of relevantPeriod ascending)

**Global.ED Encounter**

["Encounter, Performed": "Emergency Department Visit"]

**Global."NormalizeInterval"(pointInTime DateTime, period Interval<DateTime>)**

if pointInTime is not null then Interval[pointInTime, pointInTime]

else if period is not null then period

else null as Interval<DateTime>

# “ED Encounter with Decision to Admit” Admit Order Definition & Functions

**AdmitDecisionUsingEncounterOrder(EncounterInpatient "Encounter,  
Performed")**

Last(["Encounter, Order": "Decision to Admit to Hospital Inpatient"] AdmitOrder

let LastEDVisit: **"LastEDEncounter"(EncounterInpatient)**

where AdmitOrder.authorDatetime during LastEDVisit.relevantPeriod

and AdmitOrder.authorDatetime before or on

**"EDDepartureTime"(LastEDVisit)**

sort by authorDatetime)

# “ED Encounter with Decision to Admit” Admit Order Function

**"LastEDEncounter"(EncounterInpatient)**

**EDDepartureTime(Encounter "Encounter, Performed")**

Last(Encounter.facilityLocations Location

where Location.code in "Emergency Department Visit"

and **Global."HasEnd"(Location.locationPeriod)**

return

end of Location.locationPeriod

sort ascending

# “ED Encounter with Decision to Admit” Admit Order Function

**Global.HasEnd(period Interval<DateTime>)**

not ( end of period is null

or end of period = maximum DateTime)

**2021 Version**

end of Location.locationPeriod

!= maximum DateTime

# Measure Population Narrative

Initial Population

Measure Population Logic

Measure Population  
“Initial Population”

# Measure Population Exclusions Narrative

Emergency department encounters with an admission source in "Hospital Setting" (any different facility-by location or CCN) resulting in an inpatient stay

# Measure Population Exclusions Logic

## Measure Population Exclusion

“Global."Inpatient Encounter” EncounterInpatient where  
“LastEDEncounter”(EncounterInpatient).admissionSource  
in "Hospital Settings”

“Global."Inpatient Encounter” EncounterInpatient where  
“LastEDEncounter”(EncounterInpatient).admissionSource  
in "Hospital Settings”



# Measure Observation Narrative

Median time (in minutes) from the Decision to Admit to inpatient to the time the patient physically departs the ED to inpatient hospitalization

# Measure Observation Logic Changes

## 2022 Measure Observation

Median (duration in minutes of  
Interval[Coalesce(start of  
Global."NormalizeInterval"("AdmitDecisionUsingAssessment"(EncounterInpatient).relevantDate  
time,  
"AdmitDecisionUsingAssessment"(EncounterInpatient).relevantPeriod),  
"AdmitDecisionUsingEncounterOrder"(EncounterInpatient).authorDatetime),  
"EDDepartureTime"("LastEDEncounter"(EncounterInpatient))])])

## 2021 Measure Observation

Median (duration in minutes of  
Interval[Coalesce("AdmitDecisionUsingAssessmentDuringLastEDBeforeDeparture"(EncounterI  
npatient).relevantDatetime,  
"AdmitDecisionUsingEncounterOrderDuringLastEDandBeforeDeparture"(EncounterInpatient).  
authorDatetime),  
"EDDepartureTime"("LastEDEncounter"(EncounterInpatient))])])

# Measure Observation Logic

Median (duration in minutes of

Interval[Coalesce(start of

Global."NormalizeInterval"("AdmitDecisionUsingAssessment"(EncounterInpatient).relevantDatetime,

"AdmitDecisionUsingAssessment"(EncounterInpatient).relevantPeriod),

"AdmitDecisionUsingEncounterOrder"(EncounterInpatient).authorDatetime),

"EDDepartureTime"("LastEDEncounter"(EncounterInpatient))])])

# Measure Observation Functions

## **AdmitDecisionUsingAssessment(EncounterInpatient "Encounter, Performed")**

```
Last(["Assessment, Performed": "Emergency Department Evaluation"] EDEvaluation
  let LastEDVisit: "LastEDEncounter"(EncounterInpatient)
  where EDEvaluation.result in "Admit Inpatient"
  and Global."NormalizeInterval"(EDEvaluation.relevantDatetime,
EDEvaluation.relevantPeriod)starts during
LastEDVisit.relevantPeriod
  and Global."NormalizeInterval"(EDEvaluation.relevantDatetime,
EDEvaluation.relevantPeriod)starts before or on
"EDDepartureTime"(LastEDVisit)
  sort by start of Global."NormalizeInterval"(relevantDatetime,
relevantPeriod))
```

## **LastEDEncounter(EncounterInpatient "Encounter, Performed")**

```
Last(Global."ED Encounter" EDVisit
where EDVisit.relevantPeriod ends 1 hour or less before or on
start of EncounterInpatient.relevantPeriod
  sort by end of relevantPeriod ascending)
```

## **AdmitDecisionUsingEncounterOrder(EncounterInpatient "Encounter, Performed")**

```
Last(["Encounter, Order": "Decision to Admit to Hospital Inpatient"] AdmitOrder
  let LastEDVisit
  "LastEDEncounter"(EncounterInpatient)
  where AdmitOrder.authorDatetime during
LastEDVisit.relevantPeriod
  and AdmitOrder.authorDatetime before or on
"EDDepartureTime"(LastEDVisit)
  sort by authorDatetime)
```

## **EDDepartureTime(Encounter "Encounter, Performed")**

```
Last(Encounter.facilityLocations Location
  where Location.code in "Emergency Department Visit" and Global."HasEnd"(Location.locationPeriod)
  return end of Location.locationPeriod
  sort ascending)
```

# ED – 2 Stratification Narrative

**Stratification describes the strata for which the measure is to be evaluated the total score and strata are reported**

# Stratification 1

Stratification 1—all patients seen in the ED and admitted as an inpatient who do not have an inpatient encounter principal diagnosis (rank=1) consistent with psychiatric/mental health disorders

Global."Inpatient Encounter" EncounterInpatient

**where not exists** ( EncounterInpatient.diagnoses Diagnosis

where Diagnosis.code in "Psychiatric/Mental Health  
Diagnosis"

and Diagnosis.rank = 1)

# Stratification 2

Stratification—all patients seen in the ED and admitted as an inpatient who have an inpatient encounter principal diagnosis (rank=1) consistent with psychiatric/mental health disorders

Global."Inpatient Encounter" EncounterInpatient

**where exists** ( EncounterInpatient.diagnoses Diagnosis

where Diagnosis.code in "Psychiatric/Mental Health  
Diagnosis"

and Diagnosis.rank = 1 )

# Question and Answer Segment



# Question 1

If a patient comes to the ED and a decision to admit to Observation is ordered, but then at the 23rd hour is transferred to an inpatient unit, is the patient included in the IP?

# Answer 1

The data for this measure are assessed after the inpatient hospitalization ends for encounters equal to or less than 120 days. The logic assesses for an inpatient encounter that occurred within an hour of an ED Visit.

# Question 2

If there are multiple times for decision to admit, what time should be used in the calculation for the ED-2 measure?

# Answer 2

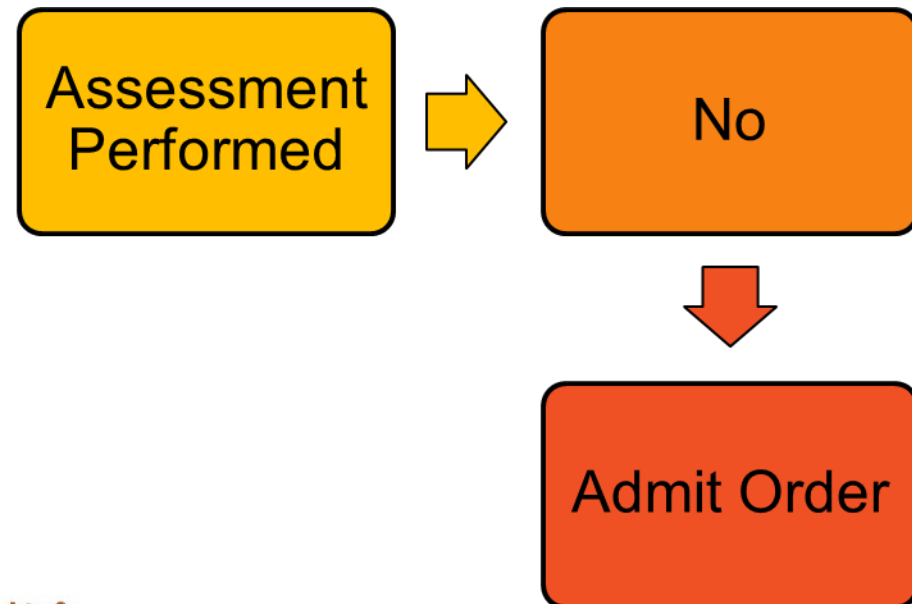
If there are multiple times for the decision to admit assessment, use the last (most recent) time that occurred during the ED encounter that preceded the inpatient admission.

# Question 3

Is there a source hierarchy when multiple times are listed on different sources?

# Answer 3

The intent is for the measure to first evaluate for a relevant date/time of an ED assessment performed that resulted in a decision to admit inpatient. If an assessment does not exist, then the measure assesses for an author date time of an order to admit to inpatient.



# Question 4

In response to the COVID -19 pandemic, we opened an inpatient COVID unit in our ED. Should we include this ED area in our ED2 metric? Decision to admit is valid but the patients may stay in the ED for weeks.

# Answer 4

The data for this measure are assessed after the inpatient hospitalization ends for encounters equal to or less than 120 days. The logic assesses for an inpatient encounter that occurred within an hour of an ED Visit. If the COVID-19 unit is considered inpatient and the ED visit was within an hour and the decision to admit was made in the ED and prior to the patient departing the ED, the measure observation will be calculated.



## Questions and Other Resources

### Submit eCQM Questions to ONC Issue Tracking System

Clinical or technical questions about the eCQM(s) must be submitted to JIRA for the respective measure steward to respond: <https://oncprojecttracking.healthit.gov/>

When available, the Q&A documents from the Live Webinars will be available here. Locate the specific webinar and then “Follow-up Documents” to access:

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

### eCQI Resource Center – EH Measures:

<https://ecqi.healthit.gov/eligible-hospital/critical-access-hospital-ecqms>

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## **Transcript –On Demand Expert to Expert Series: eCQM Annual Update Webinar: ED-2 eCQM - 2022**

*On Demand Recording Available for CE credit March 14-April 25, 2022*

00:01

Welcome and thank you for accessing this On Demand webinar. This webinar is a replay of a Pioneers in Quality Expert to Expert series webinar originally broadcast between December 2021 and March 2022.

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00:58

Before we start, we'd like to offer just a few tips about webinar audio. Use your computer speakers or headphones to listen. Feedback or dropped audio are common for streaming video. Refresh your screen if this occurs. You can pause the playback at any time.

1:16

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There are two sets of slides: operations, which includes CE information, and the clinical and technical deck that includes the educational content. We have also made the transcript available.

2:02

As noted at the start of this recording, this webinar is part of a series addressing the eCQM annual updates for 2022 and two new measure review webinars.

These webinars were broadcast live between December 2021 and March 2022. All of the eCQM topics shown on this slide were addressed within the series.

You can access the links to the recordings, slides, transcripts and, when available, Q&A documents at the Expert to Expert link included on this slide.

2:40

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3:17

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4:15

The learning objectives for this session are: Apply concepts learned about the logic and intent for the ED-2 eCQM; prepare to implement the ED eCQM for the 2022 eCQM reporting period; and identify common issues and questions regarding the ED-2 eCQM.

4:39

The following staff and speakers have disclosed that neither they nor their spouses or partners have any financial arrangements or affiliations with corporate organizations that either provide educational grants to this program or may be referenced in this activity: Susan Funk, Angela Flanagan, and Susan Yendro, and Marilyn Parenzan.

5:04

The agenda for today's webinar follows: Brief introduction to ED-2, review changes made to ED-2, discuss frequently asked questions, and then a facilitated audience Q&A segment.

5:19

I will now turn things over to Angela to begin your presentation. Angela, take it away.

5:27

Thank you, Susan. Hello, I'm Angela Flanagan. I'm a registered nurse with 20 plus years' experience in patient care, quality improvement, health information technology, and organizational leadership. I'm also a certified professional health information management systems and the President of the Oklahoma HIMSS chapter. I have been working at Lantana Consulting for a little over seven years with the majority of my work involving eCQM development and maintenance and most recently or more recently, the development of digital quality measures.

6:06

So the ED-2 measure assesses the median time in minutes from admit decision time to time of departure from the emergency department for emergency department patients admitted to an inpatient status. This is a continuous variable measure and is stratified by patients with and without a principal diagnosis consistent with psychiatric or mental health disorders.

6:33

There were several logic changes to the measure for 2022 reporting period based on feedback from implementers, vendors, standards changes, and harmonization. Let's start off talking about those.

6:46

These may look familiar as these, are the technical release notes (TRNs). The TRNs list the changes for each measure and can be found on the eCQI Resource Center. The names of two function... the names of two functions were shortened. So we have AdmitDecisionUsingAssessmentDuringLastEDBeforeDeparture and AdmitDecisionUsingEncounter

OrderDuringLastEDandBeforeDeparture. So we changed these.

We just shortened them to AdmitDecisionUsingAssessment and AdmitDecisionUsingEncounterOrder to improve readability.

7:28

We added a "let" clause to AdmitAssessment.AdmitDecisionUsingAssessmentDuringLastEDBeforeDeparture EncounterInpatient to streamline the text and use...and... it can be reused to express the logic and the Normalize Interval function in the ED Encounter with Decision to Admit definition.

7:54

Removed the word 'from' and added parentheses to group the logic to ensure the intent is captured in the ED Encounter with Decision to Admit definition.

We updated the Global."Inpatient Encounter" definition by adding 'day of' to ensure all cases within the measurement period are captured and evaluated in the initial population.

Updated the version of the measure authoring tool Global Common Functions Library MAT Global Common Functions 6.2.000.

Added the following timing functions: NormalizeInterval, HasStart, HasEnd, Latest, LatestOf, Earliest, EarliestOf. Please see individual measure details for application for specific timing functions.

8:47

Added a new NormalizeInterval function to the timing attributes to decrease implementation burden due to the variable use of timing attributes for select quality datatypes.

The NormalizeInterval function was applied where applicable for the following data elements: Assessment Performed, Device Applied, Diagnostic Study Performed, Intervention Performed, Laboratory Tests... Laboratory Tests Performed, Medication Administered, Medication Dispensed, Physical Exam Performed, Procedure Performed, and Substance Administered.

9:27

We've relocated the ED Evaluation results and admit inpatient in the logic to improve calculation efficiency and added 'starts' to the timing to ensure intent as captured in the AdmitDecisionUsingAssessment function.

We also revised approach for identifying the location period end date by adding the Global."HasEnd" function. The Global.HasEnd function more clearly and consistently identifies when the emergency department visit location period interval has an end date.

10:05

Based on expert review, public feedback, and terminology updates changes made to the Decision to Admit to Hospital Inpatient, Psychiatric/Mental Health Diagnosis, and Admit Inpatient value sets.

10:23

As mentioned earlier, ED-2 is a continuous variable measure and a continuous variable measure is a variable that may take on any value in an interval.

The variable in ED-2 is the minutes between decision to admit to inpatient and the ED departure. This time will vary from encounter to encounter.

In continuous variable measure the initial population is roughly equivalent to the denominator in a proportion measure. The measure population is a subset of the initial population and is roughly equivalent to the numerator in a proportion measure.

11:02

Measure observations describe the computation to be performed over the members of the measure population. First, the episodes are classified using the initial population and those satisfying that criteria are included in the initial population.

Then the members of the initial population are classified using the measure population criteria and those satisfying the criteria are included in the measure population.

Then each member of the measure population is evaluated according to the criteria defined and the measure Observations criteria.

And all the results are aggregated using a specified operator.

11:43

So I just mentioned that the results are aggregated. So what is an aggregated calculation?

It is a combination of the separate units or items. And in this example, the minutes from departure time from ED minus Decision to Admit to Inpatient time. The duration in minutes for each encounter are calculated. Then the median time for all encounters is the aggregated calculation. In this example, the median time is 240 minutes.

12:21

The initial population logic uses the define statement "ED Encounter with Decision to Admit." The logic constrains an inpatient encounter to having an ED visit with the Decision to Admit, which can be an Assessment or an Order to inpatient and ED facility LocationPeriod is not null.

This statement includes several functions, which are shown here in red. We will look at these one at a time on the subsequent slides.

12:56

So, for the ED Encounter with Decision to Admit, we have the Global."Inpatient Encounter" EncounterInpatient then we have 2 'let' clauses. The first let clause, let EDVisit, be LastEDEncounter(EncounterInpatient).

The second, let clause is the AdmitAssessment."AdmitDecisionUsingAssessment"(EncounterInpatient).

And these let clauses introduce content that can be referenced within the scope of the query.

So then starting with the 'where', we can use the let clause, AdmitAssessment, instead of "AdmitDecisionUsingAssessment."

So where (Global."NormalizeInterval" (AdmitAssessment.relevantDatetime, or AdmitAssessmentrelevantPeriod) starts during the LastED Visit.relevantPeriod.

Here, we are using the ED visit let clause instead of LastEDEncounter(EncounterInpatient). Then the logic goes on to read or ("AdmitDecisionUsingEncounterOrder"(EncounterInpatient).authorDateTime during the LastEDvisit. relevantPeriod) and exists LastEDVisit.facilityLocations Location where Location.code in Emergency Department Visit with Global."HasEnd" (Location.locationPeriod).

14:32

The measure includes a calculation that requires the time the patient departs the ED. So this logic ensures that there is an end time to that ED visit.

On the next slide we'll begin reviewing the functions included in this expression.

14:49

Again, shown here in red. And we'll start with that first, the one at the top, the Global."InpatientEncounter".

So, 'Global' is an alias for another Library, MAT Common Global Library, that is included in the ED measure. The MAT Common Global Library contains CQL expressions used across measures and allows measure developers to harmonize the logic across all the measures. So Global.InpatientEncounter, this define statement includes a function to calculate the length of stay in days.

So ["Encounter, Performed": "EncounterInpatient"], Alias being EncounterInpatient, where "LengthInDays"(EncounterInpatient. relevantPeriod) is less than or equal to 120. And EncounterInpatient. relevantPeriod ends during day of "Measurement Period". 'Day of', we mentioned is new as part of the changes that was made to this expression.

15:59

Then we have Global.LengthInDays(Value Interval<DateTime>). This function calculates the difference in days between the start of the value and the end of the value.

And in this case, the start and end of the InpatientEncounter. These functions evaluate most or last... the most recent or the LastEDEncounter that is within an hour of the InpatientEncounter.

So, the LastEDEncounter(EncounterInpatient "Encounter, Performed") function includes the Global."ED Encounter" function. Again the last, or the most recent, encounter that ends one hour or less before or on the start of EncounterInpatient.relevantPeriod. And then sort by end of relevantPeriod ascending.

17:02

Okay. So the Decision to Admit can be met with either Assessment or an Order.

The measure will first assess for the AdmitDecisionUsingAssessment. If you recall earlier, I mentioned the name of this function had changed from the long one being AdmitDecisionUsingAssessmentDuringtheLastEDBeforetheDeparture.

And we've changed that, we just shortened it to AdmitDecisionUsingAssessment.

The biggest change here is an introduction of the 'normalize,' the Global."NormalizeInterval" function.

A new addition to the Global Common Library, which is now used in measures containing datatypes that have both relevantDatetime and relevantPeriod timing attributes.

The NormalizeInterval function is meant to account for the difference and differences in EHR vendors, the way they capture the way the timing is captured. And to decrease implementation burden due to the variable using timing attributes for the same QDM datatypes used across measures. Knowing the rationale of using the NormalizeInterval function to make it easier to understand how the function is structured.

18:14

These QDM datatypes have both a relevantDatetime and a relevantPeriod.

For each of these types since there are use cases for both relevantDatetime and relevantPeriod, the recommended approach is to use NormalizeInterval function to access the timing elements. In the eCQMs 2021 annual updates, you will see Global.NormalizeInterval function is applied to these datatypes in the measures.

18:45

So AdmitDecisionUsingAssessment(Encounter Inpatient "Encounter, Performed") evaluates the decision to admit assessment time and result that was performed during the last ED visit.

So AdmitDecisionUsingAssessment(EncounterInpatient "Encounter, Performed") Last "Assessment, Performed" and then the valueset is "Emergency Department Evaluation" EDEvaluation, a new let clause here.

So, let LastEDVisit: "LastEDEncounter"(EncounterInpatient) where the EDEvaluation.result in "Admit Inpatient" and Global."NormalizeInterval"(EDEvaluation. relevantDatetime, EDEvaluation.relevantPeriod) starts during the LastEDVisit relevant period and Global."NormalizeInterval"(EDEvaluation. relevantDatetime or the... EDEvaluation.relevantPeriod) starts before or on the "EDDepartureTime" the (LastEDVisit) sort by start of Global."NormalizeInterval" (relevantDatetime, or relevantPeriod).

20:09

We continue to look at the functions within the functions included in the ED Encounter with Decision to Admit expressions.

We're still talking about the expressions used in the initial population. Functions within the AdmitDecisionUsingAssessment EncounterInpatient("Encounter, Performed") function includes the "LastEDEncounter", "ED Encounter", and "NormalizeInterval."

And on the prior slide, we reviewed LastEDEncounter logic and within it, it includes the Global."ED Encounter" expression, which is in the data element "Encounter, Performed" Emergency Department Visit.

20:49

So now looking at the last function on this page, Global.NormalizeInterval, we're looking at Global."NormalizeInterval" (pointInTimeDateTime, period Interval< DateTime>). If pointInTime is not null, then Interval [pointInTime, PointInTime] else if the period is not null then period else null as Interval<DateTime>.

21:19

More specifically, this Global."NormalizeInterval" function says, given a DateTime and a period returns the Period if a period is provided, or if the interval beginning and ending on the DateTime, if a DateTime is provided.

21:41

Okay, so, we reviewed the first part of the Decision to Admit Using an Assessment.

And now, we'll look at the second option for capturing the Decision to Admit using an Order.

So, here we have `AdmitDecisionUsingEncounterOrder(EncounterInpatient "Encounter, Performed")`. The logic captures the decision to admit using an encounter order and time that the order was signed during the last ED visit. This is... this logic is similar to the Admit Decision Using an Assessment, except the expression evaluates for this Encounter Order for the decision to admit.

So, `AdmitDecisionUsingEncounterOrder (EncounterInpatient "Encounter, Performed")`, the `Last(["Encounter, Order": Decision to Admit to Hospital Inpatient])` let the `LastEDVisit: "LastEDEncounter"(EncounterInpatient)` where the `AdmitOrder.author Datetime` is during the `LastEDVisit.relevantPeriod` and `AdmitOrder.authorDatetime` is before or on the `EDDepartureTime` of the (`LastEDVisit`) and sort by `authorDateTime`.

The default for sorting, or sort by, is ascending. So, the logic does not indicate ascending or descending, it will sort ascending.

23:08

Functions included in both the Assessment and the Order expressions include the `"LastEDEncounter"`, and the `EDDepartureTime`.

We have talked about the `LastEDEncounter` but not the departure time. So the `EDDepartureTime(Encounter "Encounter, Performed")` is evaluating the time the patient physically departed the emergency department and includes another function `Global."HasEnd"`. `HasEnd` is shown in red.

23:42

So an addition to the Global Common Library, this function is derived from a `NormalizeInterval` function.

The purpose of `HasEnd` function is to check if the interval has an ending boundary specified. The end of the interval is not null, and not the minimal `Datetime` value.

And then we have the `Last(Encounter.facilityLocations Location where Location.code in "Emergency Department Visit" and Global."HasEnd"(Location.locationPeriod))` return end of `Location.locationPeriod` sort ascending.

24:30

So this new function is similar to the logic that we used in the measure in the 2021 version, shown in the bottom right corner.

24:41

But now the logic is part of the Global library for consistency across measures.

So here, given an interval... and in this case, the ED visit arrival and departure time return true if the interval has an ending boundary specified. The end of the interval is not null and not maximum `DateTime` value.

`Global.HasEnd(period Interval<DateTime>)` not end of period and not end of period is null or not end of period equals maximum `DateTime`.

25:27

Okay, that was the initial population. That's the majority of the measure.



So we have the measure population, that narrative just simply indicates "Initial Population."  
Measure population exclusion: the emergency department encounters with an admission source in "Hospital Setting" (any different facility-by location or CCN) resulting in an inpatient stay. CCN is CMS' Certification Number.

26:02

So, here is the logic Measure Population Exclusion. We exclude the most recent ED encounter, Last ED Visit that occurred within an hour of the inpatient admission with ED admissionSource in "Hospital Settings". Again, any different facility by location or CCN. The "Global."Inpatient Encounter" EncounterInpatient with a LastEDEncounter(Encounter Inpatient).admissionSource in "Hospital Settings."

So basically was the patient admitted from another source: another hospital transferred from another ED.

26:44

And the other part of this exclusion is "Global."Inpatient Encounter" and "LastEDEncounter" expressions, and we've already went over those.

26:58

Okay, because this is a continuous variable, we're looking at that measure observation, because the main thing with this measure is we want to know the median time in minutes from the decision to admit to inpatient -- to the time the patient physically departs the ED to inpatient hospitalization.

Measure observations provide the instructions on how to compute the performance. Measure observations are described using statistical methodology such as count, median, and mean.

27:33

In the lower section, the yellow is indicating the verbiage that was removed to improve readability on those pieces of those identifiers.

27:43

So median. And this is looking at the duration from the decision to admit order assessment to the departure from the emergency department. So, the median duration in minutes of the interval. Coalesce, which coalesce returns the first non null expression among two or more expressions.

28:07

The start of the Global.Normalize ("AdmitDecision UsingAssessment"(EncounterInpatient) relevantDatetime or the AdmitDecisionUsingAssessment(EncounterInpatient).relevantPeriod).

28:20

Or the AdmitDecisionUsingEncounterOrder(EncounterInpatient).authorDateTime).

And the EDDepartureTime("LastEDEncounter"(EncounterInpatient)).

Median of the duration in minutes. The median operator evaluates the ED minutes. Then we are looking at the interval of the start time or author time of when the decision to admit, the assessment or the order, was made to the time the patient physically departed the ED.

As mentioned, the term coalesce is used here, and the coalesce operator returns that first null expression among two or more expressions.

29:09

So if there is an assessment performed that's captured... for the Admit Decision the relevant.DateTime or the relevantPeriod is used to calculate the start time.

If the assessment is null, then the logic would evaluate the time the decision to admit order was signed. Then the result of the ED departure time before or on the LastEDEncounter within an hour of the encounter inpatient is the end time for the interval.

29:40

For example, if the assessment performed relevantDatetime is 08:00 hours then the Normalize function calculates the interval start at 08:00. ...at 08:00. And then if the ED departure time is 11:30, the median time in minutes is 150.

30:06

Each of the included functions were discussed in the initial population section. These are the functions used in the measure observation function, which we have previously discussed.

If you recall, the AdmitDecisionUsingAssessment(EncounterInpatient "Encounter, Performed") function assesses the last assessment with a result of Admit Inpatient that occurred during the ED encounter and prior to the patient leaving the ED. And AdmitDecisionUsingEncounterOrder (EncounterInpatient "Encounter, Performed") assesses for an order to admit with a signature. And basically the same constraints as the AdmitDecisionUsingAssessment.

Then the LastEDEncounter in the bottom left corner, defines the LastEDEncounter as the one that ends one hour or less on or before the Inpatient Encounter.

31:06

And the last box on the right hand side corner, defines the ED departure time as the time documented that the patient physically departs the ED.

31:20

These measures are stratified. So the stratification describes the strata for which the measure is to be evaluated.

The measure could evaluate based on a single or the eCQM based on groups, like condition age, or procedure. ED-2 evaluates, or arranges the data into two groups.

Patient encounters without a principal diagnosis of rank equal to 1 of Psychiatric/Mental Health Diagnosis.

31:54

So Global."Inpatient Encounter" EncounterInpatient where not exists (EncounterInpatient.diagnoses Diagnosis where the diagnosis code in "Psychiatric/Mental Health Diagnosis" and Diagnosis.rank = 1.)

32:13

So we reviewed the first part of this logic is referring to the Global.InpatientEncounter and the length of days where we were looking at the Inpatient Encounter Length of days is less than or equal to 120 days. And the Encounter Inpatient relevantPeriod ends during day of measurement period.

A principal diagnosis is addressed using US Core Concepts and the Encounter Diagnosis use value billing with the diagnosis rank equal to 1.

32:45

For Stratification 2 Patient encounters with the principal diagnosis (equal to a rank 1 equal to 1) psychiatric/mental health diagnosis.

So here Global."Inpatient Encounter" EncounterInpatient where.exists (EncounterInpatient.diagnoses Diagnosis where diagnosis.code in Psychiatric/Mental Health Diagnosis, and the Diagnosis.rank is = to 1).

33:15

Thanks, Angela. We'll now move into the ED Frequently Asked Question segment for today's webinar. Susan Yendro, please kick off the segment with Angela whenever you are ready.

33:31

Thank you, Susan. The first QUESTION is: If a patient comes to the ED and a decision to admit to Observation is ordered, but then at the 23<sup>rd</sup> hour is transferred to an inpatient unit, is this patient included in the IP?

[ANSWER]: Well, processes vary across hospitals, making it difficult to provide a definitive answer for this question. The data for this measure are assessed after the inpatient hospitalization ends for encounters equal to or less than 120 days. In the retrospective review, does the EHR or does the chart reflect that the patient, the inpatient, does it reflect an inpatient admission that followed an ED within an hour with a Decision to Admit to Inpatient. If that's the case, then the patient encounter would be considered in the initial population.

If the EHR/the chart retrospective review does not include that the inpatient admission followed an ED visit with a Decision to Admit, then it would not be considered in the initial population. Thank you.

34:49

So, our second QUESTION is: If there are multiple times for decision to admit, what time should be used in the calculation for the ED-2 measure?

[ANSWER] If there multiple times for the decision to admit, use the last, the most recent, time that occurred during the ED Encounter that preceded the inpatient admission. Thank you.

35:20

And our next QUESTION is: Is there a source hierarchy when multiple times are listed in different sources?

[ANSWER] Okay, and Susan, if I recall correctly, this ticket is reference... is referring to the Admit Decision...admit decision to admit inpatient based on an assessment or an order and if multiple assessments or order, is there a hierarchy?

So the intent of the measure is to first evaluate for the relevantDatetime of an ED Assessment Performed that resulted in the Decision to Admit. So basically, yes, we want to capture if the assessment was performed first, it would be calculated first. If an assessment was not performed, then it would look at the Encounter Order. Thank you.

36:21

QUESTION 4 asks: In response to the COVID-19 pandemic, we opened an inpatient COVID unit in our ED. Should we include this ED area in our ED-2 metric? Decision to admit is valid but the patients may stay in the ED for weeks.

[ANSWER] Okay, so, the data for this measure assess, again, after the inpatient, hospitalization ends for encounters equal to or less than 120 days. So the logic assesses for an inpatient encounter that occurred within an hour of an ED visit, if the patient record indicates an inpatient hospitalization that followed an ED visit within an hour of admission, then the measure Observation for each hospitalization and the COVID unit equals the time in minutes from the decision to admit the patient from the ED to the inpatient COVID unit hospital to the time in minutes the patient was physically removed from the care of the ED staff and placed in the care of the inpatient COVID unit staff.

So if the COVID unit is considered inpatient but a patient bypasses the ED and is directly admitted to the COVID unit, these hospitalizations would not be considered for the ED-2 initial population. Hope that answers your question.

37:55

Thanks, Angela. We've included a resource slide here to direct you to the eCQI Resource Center, the Pioneers In Quality website, the ONC issue Tracking System and the Joint Commission's previous webinars area on our website.

38:14

We will now move into the live Q&A segment. As a reminder, please submit questions via the question pane. To do so, click the question mark (?) in the audience toolbar. A panel will open for you to type and submit your question. Include the slide reference number, measure, or that just a slide when possible. All questions not answered verbally during the live event will be addressed in a written follow-up Q&A document that will be posted after the event and that document will be posted to The Joint Commission website within several weeks after the live event. With that, I will turn things over to Susan Yendro and Marilyn and you guys will be facilitating these questions and answers.

39:04

Thank you.

Thank you, Susan. So the first QUESTION asks: So these changes will be what we will submit for calendar year 2022?

And the ANSWER is: That is correct CMS 111 version 10 is used for the 2022 Reporting period.

39:32

Okay, next two QUESTIONS are very similar: If patient is initially placed on Observation, but during the stay is changed to inpatient admit, is this patient included in the population for the measure?

[ANSWER] And Angela did cover that in the questions in the presentation. So hopefully you got an answer to that... Those two questions.

40:02

Great. Thank you.

And then we got a QUESTION regarding showing an example of an EMR case and we appreciate the question. We're not really able to show an example in the session today, but we'll look into it, do some research and may be able to provide additional examples in the Q&A document following the session today.

40:26

Great. Okay. Our next QUESTION is regarding stratification. Not sure what the ranking Diagnosis.rank = 1 relative to a psychiatric/mental health diagnosis. Is this indicating admit for psych mental health are not inclusive?

[ANSWER] The rank of 1 means, it is the principal diagnosis vs. secondary diagnosis.

40:59

Okay, we got another QUESTION relating to the time period and it asks: Do these changes for ED-2 go into effect with this year's eCQM submission using 2021 data?

And the ANSWER is that these changes are for the 2022 reporting period. Thank you.

41:27

Angela, I see somebody asking if we could repeat the answer regarding Observation. Would you be able to go back to that slide and review that question again?

Sure. Let's see. During... Which question was it? Regarding Observation.

Angela, [inaudible] you can just talk about Observation and just review that again.

Okay, so for Observation visits again, we look at this retrospectively. So we have some facilities inform us that they may have patients that are placed in Observation, but then, you know at 23 hours are moved and placed in inpatient. So when they look at that chart, after the patient has been discharged, that's all been you know all rolled up together. So now it doesn't indicate Observation and the case of this patient went from ED and their time started to inpatient.

So if that's what your facility does, the Observation time, it's not considered separate by the time they leave when you look at the chart respectively, then they would be included in the initial population. Thank you. Hope that makes sense.

43:13

Yeah, thank you for the clarification. Okay. So our next QUESTION asks: For slides 33 and 34 stratification, patients with psychiatric diagnoses are excluded?

And the ANSWER is: This measure is stratified by patients with and without a principal diagnosis consistent with psychiatric or mental health disorders. Stratification 1 = patients who do NOT have a principal diag... principal psychiatric or mental health disorder diagnosis.

Stratification 2 = patients, who DO have a principal psychiatric or mental health disorder diagnosis.

44:02

Okay, our next QUESTION. Did I hear correctly? It will use the latest time the decision to admit was made?

And the ANSWER is: If there are multiple times for the decision to admit, use the last, or the most recent time that occurred during the ED encounter that preceded the inpatient admission. And I see a response to the clarification on Observation code:

44:33

Question was helpful. Thank you for reviewing that again. Got lots of questions in here and just so the audience knows, we have our subject matter experts in the background pulling together the answers as we are reading off the questions and answers that we have received thus far.

45:04

And at this point, Angela, are there any questions that we can review live? I'm taking a look at some of these unanswered questions now. One minute. Here's one.

Maybe you can go... it says: [QUESTION] can you repeat Answer 2, so I'm guessing that we're going to if you could go back to the slide for Question 2 and then repeat the answer for Question 2, that would be helpful.

[QUESTION] If there are multiple times for decision to admit, what time would be used in the calculation for ED-2?

[ANSWER] So if there are multiple times for the decision to admit, use the last or most recent time that occurred during the ED encounter that preceded the inpatient admission.

Great. And thank you.

45:55

There is a QUESTION here: Because of COVID surges, there have been times patients have been admitted to the initial population are Inpatient but managed in the ED areas and sometimes for days. How is ED departure time managed in cases using surge beds in the ED area.

46:14

[ANSWER] Again, we're going to look at the chart retrospectively after the patient has been discharged. How does the chart read? You know if it was considered inpatient and it wasn't the ED emergency staff actually caring for these patients. Although it was the ED floor, but it was the inpatient staff billed to inpatient and really considered an inpatient care. Then the chart is probably going to read that it was inpatient.

So again, you just have to read the chart, after the patient is discharged. And if it demonstrates that the inpatient was within an hour of the ED encounter with that decision to admit being made in the ED encounter, then it would be included. Okay.

Thank you so much. At this point. We are still working on answering the questions in the background, and we will provide answers to all of your questions in a follow-up document... question and answer document that will be posted.

So at this point, I'll turn it back over to Susan to review our follow-up slides.

47:30

Thank you. Thanks so much, Susan. Susan and Angela and Marilyn for facilitating all those questions and for all of the thoughtful responses that our team was typing in the background. As previously noted, we will post all of the answers later in a follow-up Q&A document on the website.

47:51

A few closing remarks, as we close out this session - 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 web page via the link that is shown on this slide.

48:08

And just a quick reminder that this Expert to Expert webinar series on eCQM Annual Updates began on December 9th with the VTE measure and will extend into March of 2022. We will address the 2022 eCQM annual updates for all of the measures that are listed on this slide.

We will also be doing New Measure Review webinars for the new hypoglycemia, and hyperglycemia eQMs and The Joint Commission-only ePC 07, severe maternal complications eCQM. Additional information will be available at the link, that's listed the bottom of that slide.

48:47

And yes, you can see it there. And now... a survey link will be emailed to participants tomorrow. If you qualify for CE credits, complete the survey and provide the email that you used to register.

At the end of the online evaluation survey, when you click submit, you will be redirected to a URL from which you can print or download and save a PDF CE certificate.

You will also receive an automated email that includes the link to the CE certificate.

And with that, thank you to Angela, Susan, and Marilyn and all of our teammates that were answering questions in the background for the Q&A.

And thank you to all of you who joined us today. Have a great day.