







# **Expert to Expert Webinar Series**

New Measure Review Webinar Excessive Radiation Dose or Inadequate Image
Quality for Diagnostic Computed Tomography (CT) in
Adults eCQM (for both Inpatient and Outpatient Settings) for
2025 implementation







# Webinar Audio and Functionality

Audio is by VOIP only – Use your computer speakers/headphones to listen. There are no dial in lines. Participants are connected in listen-only mode. Feedback or dropped audio are common for live streaming events. Refresh your screen/rejoin.







We will not be recognizing the Raise a Hand or Chat features.

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The slides are designed to follow Americans with Disabilities Act rules.







# 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=toolsresources)

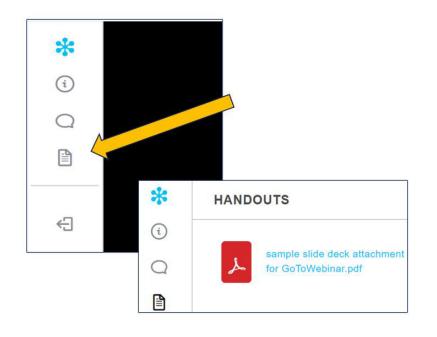








### **Access the Slides**



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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 <a href="https://www.jointcommission.org/resources/continuing-education-credit-information/">https://www.jointcommission.org/resources/continuing-education-credit-information/</a>



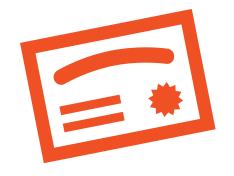




# **CE Survey and Certificate**

## After webinar, survey can be accessed in two ways:

- 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 Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults eCQM for the 2025 calendar year.

Utilize answers regarding common issues/questions for the Excessive Radiation 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 for the inpatient setting 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.

- Susan Funk, MPH, LSSGB, Associate Project Director, Engagement on Quality Improvement Programs (EQIP)
- Rebecca Smith-Bindman, MD, Professor, UCSF Department of Epidemiology and Biostatistics and Co-Founder and Chief Medical Officer, Alara Imaging
- Marc Kohli, MD, Professor, UCSF Department of Radiology and Co-Founder and Consultant, Alara Imaging







# Webinar Agenda

Highlight how to access eCQI Resource Center navigational demo (measure specifications, value sets, measure flow diagrams and technical release notes)



- Review the new Excessive Radiation eCQM
- Review the measure flow/algorithm
- Review FAQs
- Facilitated Audience Q&A Segment





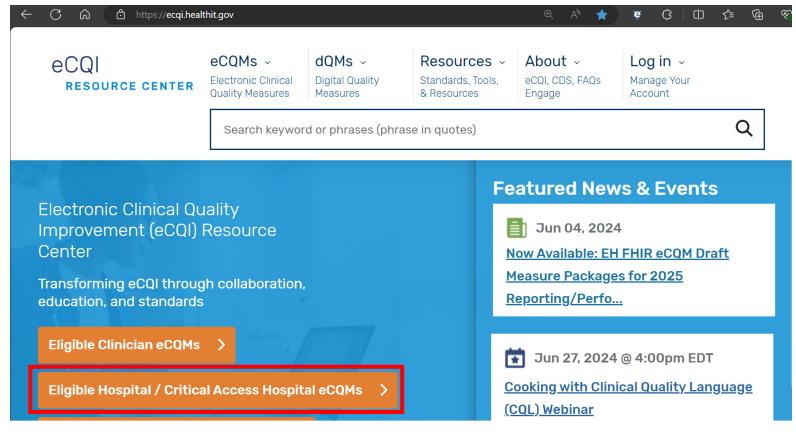
# eCQM Resources on the eCQI Resource Center







# 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 🗗

For more details, view the video short here:

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







# Introduction – Webinar Presenter, eCQM Developer, and Steward

Rebecca Smith-Bindman, MD, Professor, UCSF Department of Epidemiology and Biostatistics Co-Founder and Chief Medical Officer, Alara Imaging



# Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults – Inpatient Setting

Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults

- CMS 1074 v2: For Facility IQR
- CMS 1206 v2: For Facility OQR
- CMS 1056 v2 For Clinicians

Measure Steward

Alara Imaging

### **Intent and Rationale**

- CT scans performed in >1/3 of hospitalizations, and >90 million scans are performed annually in the U.S.
- There is marked variation in the radiation doses used to perform these exams
- Excess radiation from CT represents a significant modifiable iatrogenic health risk, as excess radiation increases the risk of developing cancer
- Research suggests that when healthcare organizations are provided with a summary of their CT doses, their subsequent doses can be reduced

# **Description**

- This measure provides a standardized method for monitoring the performance of CT to discourage unnecessarily high radiation doses and has a balancing component of image quality to ensure CT scan retains image quality of diagnostic value.
- This electronic clinical quality measure (eCQM) is expressed as a percentage of CT exams that are out-of-range based on having either excessive radiation dose or inadequate image quality relative to evidence-based thresholds based on the exam's clinical indication.
- This eCQM requires the use of translation software to translate data into an electronic health record (EHR) compatible format prior to eCQM calculation.

# **Scoring**

- Scoring: As Proportion
- Measure Type: Intermediate Clinical Outcome
- Improvement Notation: Lower score indicates higher quality

Hospital IQR: CY 2025 reporting period

Hospital OQR: CY 2027 reporting period

Eligible Clinicians: CY 2025 reporting period

**Use in CMS Programs** 

# Requirement for Translation Software

- DICOM (or Digital Imaging and Communications in Medicine) image and radiation dose reports are standardized and digitized, but they are not integrated with EHRs and the associated eCQM framework.
- Translation software retrieves data from structured fields within the EHR and radiology digital systems, including the Radiology Information System (RIS) and the Picture Archiving and Communication System (PACS).
- Translation software results in three LOINC-encoded data elements that are stored in EHRs for eCQM calculation.

#### **Translation Software**

- The purpose of this translation software is to access and link the primary data elements with minimal site burden, assess each CT exam for eligibility based on specified criteria, and generate the three new data elements mapped to a clinical terminology for eCQM consumption.
- The translation software will create three variables:

CT Dose and Image Quality Category

Calculated CT Global Noise

Calculated CT Size-Adjusted Dose

 These transformed data elements can be stored in the EHR used by any vendor to calculate the eCQM.

# CT Category, Size Adjusted Dose, and Noise

#### **CT Category**

- Scans judged using EHR data based on why the study ordered, not what was done.
- The clinical indication captured from the diagnostic codes of visit when CT scan ordered.
- CT scans categorized based on anatomical region scanned and clinical indication (Radiology 2022).

#### Size Adjusted Dose

- The total dose DLP -is included as the sum of all series.
- The dose is scaled to patient size to adjust for population differences across reporting entities
- This size adjustment ensures facilities with large patients are not penalized.

#### Noise

- Image noise is a standardized method to assess image quality.
- Balancing component of measure to prevent incentive to reduce radiation doses from being excessive.
- To be within range each CT exam must have at least one series with image quality above the floor.

# Working with Alara Translation Software

- Alara's translation software accurately transforms primary data into a format that can be used for eCQM calculations.
- The Alara translation software is CMS-approved and free to use Reporting entities install Alara's software and configure. integrations with their radiology and EHR systems.
- All calculations are performed without the necessary data leaving the reporting entity's network.
- To initiate this process, reporting entities should use the Alara ExRad Form.
- Reporting entities may alternatively choose any software that is able to generate the same standardized data elements necessary to calculate the measure consistent with the measure's specifications.
- In either case reporting entities can use their preferred vendor for eCQM calculation and CMS reporting.

#### CMS provided clarification on date January 30, 2025 regarding the reporting requirements

Hospitals and clinicians can use any software vendor who is capable of calculating and reporting on this eCQM as long as they do so in accordance with the measure's specifications.

The specifications rely on the CT Dose and Image Quality Category that assigns each CT exam to one of 18 categories based on the diagnosis associated with the exam order (codified using ICD-10-CM codes) and procedure performed (codified using CPT® codes).

The eCQM program is an electronic health record (EHR) based program, and the information on the clinical indication must come from the EHR.

As a part of the recent clarification CMS suggests hospitals and clinicians may seek assurance from their vendor that they are using the correct and required variables. CMS has stated that they will monitor measure results to ensure that reported data are reliable and valid and calculated correctly; CMS will review vendor results and flag results that are inconsistent with measure specifications.

# ExRad Measure Hospital IQR Reporting Period

- This eCQM is an episode-based measure and should be reported for each eligible CT scan performed in a hospital inpatient setting during reporting period.
- This should only include CT Scans performed during an Encounter that was completed during the measurement period and has a discharge date.

# ExRad Measure-IQR Measure Calculation

- The measure will evaluate each included CT exam based on allowable thresholds that are specified by the CT Dose and Image Quality Category.
- An exam is considered out of range if either the Calculated CT Global Noise or the Calculated CT Size-Adjusted Dose is out of range for the CT Dose and Image Quality Category.
- Exams will be evaluated against their corresponding thresholds for the Calculated CT Size-Adjusted Dose in dose length product, and Noise for the specific CT Category.

# ExRad Measure Flow- Hospital IQR

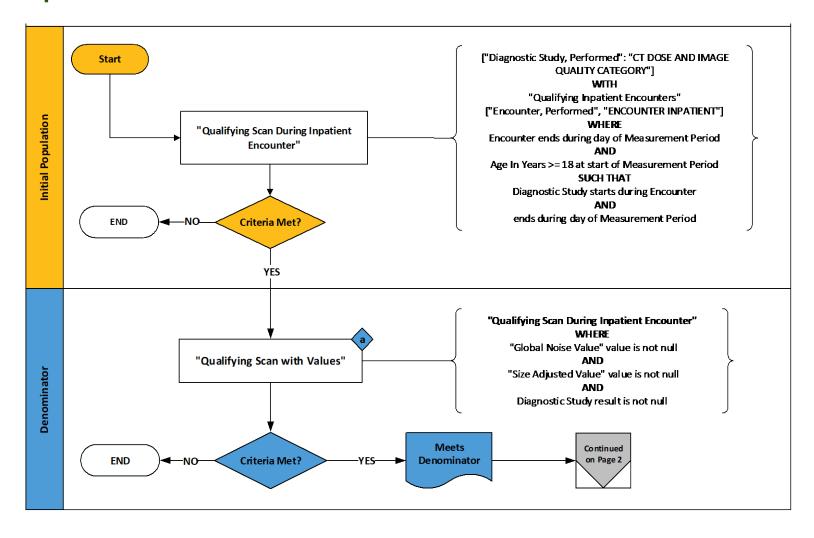
# **Initial Population**

All CT scans in adults aged 18 years and older at the start of the measurement period that have a CT Dose and Image Quality Category and were performed during an inpatient hospitalization during the measurement period

## Denominator

Equals Initial population with a CT Dose and Image Quality Category, a Calculated Global Noise value, and a Calculated CT Size-Adjusted Dose value

# ExRad Measure Flow Hospital IQR

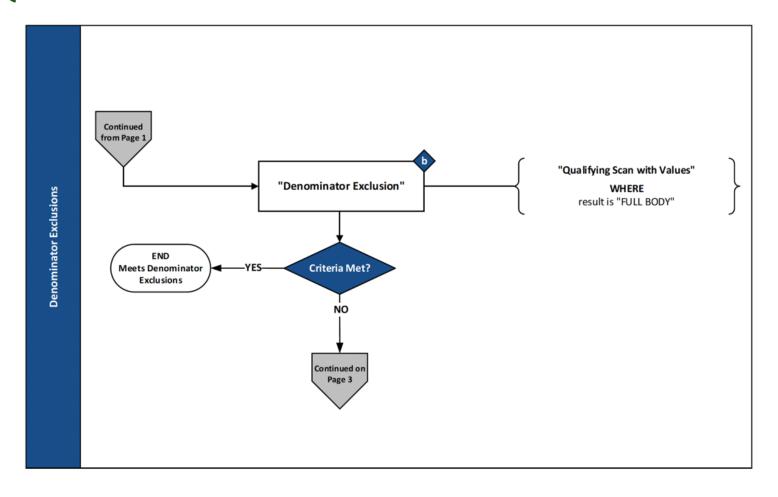


# ExRad Measure Flow IQR

### **Denominator Exclusions**

- CT scans with missing patient age or missing CT
   Dose and Image Quality Category are excluded from the initial population.
- CT scans with a missing Calculated Global Noise value or a missing Calculated CT Size-Adjusted Dose value are not included in the denominator.
- CT scans assigned a CT Dose and Image Quality Category (LOINC(R) 96914-7) value using the LOINC(R) answer list (LL5824-9) of full body (LA31771-1) are excluded from the denominator.

# ExRad Measure IQR Denominator Exclusions



#### **ExRad Measure Flow**

**IQR** 

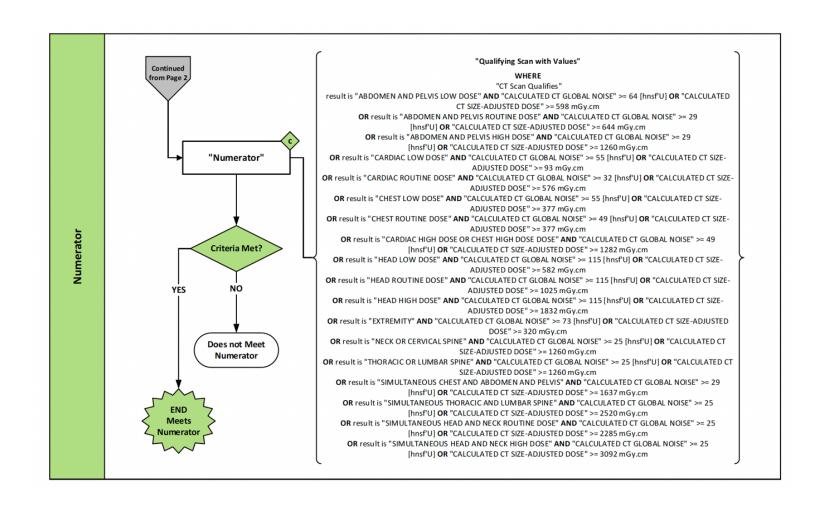
**Numerator** 

Each CT scan is assigned to a CT Dose and Image Quality Category

The Calculated CT Global Noise Value and Calculated CT Size Adjusted Dose Value are compared with allowable values specific to the CT Dose and Image Quality Category

If either the Calculated CT Global Noise Value or the Calculated CT Size Adjusted Dose Value are higher than the thresholds, than the exam is considered out of range

# ExRad Measure Numerator- Hospital IQR



# ExRad Measure IQR Thresholds

#### [Loinc # (=CT Category), noise threshold, size adjusted dose threshold]

```
[LA31752-1 (=Abdomen and Pelvis, Low Dose), 64, 598];
[LA31753-9 (=Abdomen and Pelvis, Routine Dose), 29, 644];
[LA31754-7 (=Abdomen and Pelvis, High Dose), 29, 1260];
[LA31755-4 (=Cardiac Low Dose), 55, 93];
[LA31756-2 (=Cardiac Routine Dose), 32, 576];
[LA31758-8 (=Chest Low Dose), 55, 377];
[LA31759-6 (=Chest Routine Dose), 49, 377];
[LA31761-2 (=Chest High Dose or Cardiac High Dose), 49, 1282];
[LA31762-0 (=Head Low Dose), 115, 582];
[LA31763-8 (=Head Routine Dose), 115, 1025];
[LA31764-6 (=Head High Dose), 115, 1832];
[LA31765-3 (=Upper or Lower Extremity), 73, 320];
[LA31766-1 (=Neck or Cervical Spine), 25, 1260];
[LA31767-9 (=Thoracic or Lumbar Spine), 25, 1260];
[LA31768-7 (=Combined Chest, Abdomen and Pelvis), 29, 1637];
[LA31851-1 (=Combined Thoracic and Lumbar Spine), 25, 2520];
[LA31769-5 (=Combined Head and Neck, Routine Dose), 25, 2285];
[LA31770-3 (=Combined Head and Neck, High Dose), 25, 3092]
```

# ExRad Hospital IQR Measure Sample Calculation

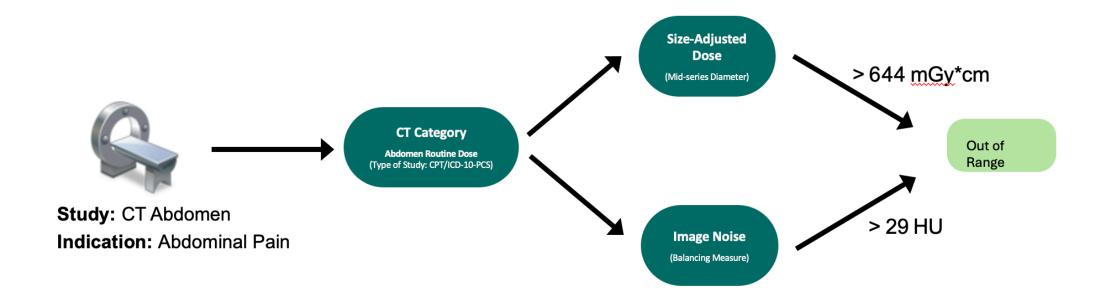


Image of measure flow for ExRad measure sample calculation

### CMS1056 eCQM Flow

2025 eCQM Flow

eCQM Identifier: CMS1056v2

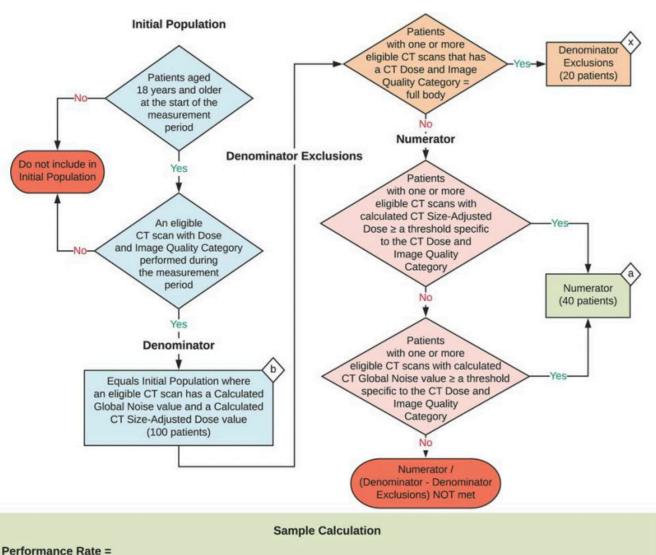
CBE Number: 3633e

NOTE: This flow diagram represents an overview of population criteria requirements. Refer to the eCQM specification for a complete list of data elements included in this measure and required for submission.

#### Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults (Clinician Level)

This measure provides a standardized method for monitoring the performance of diagnostic CT to discourage unnecessarily high radiation doses, a risk factor for cancer, while preserving image quality. It is expressed as a percentage of patients with CT exams that are out-of-range based on having either excessive radiation dose or inadequate image quality relative to evidence-based thresholds based on the clinical indication for the exam. All diagnostic CT exams of specified anatomic sites performed in inpatient, outpatient and ambulatory care settings are eligible. This measure is not telehealth eligible. This eCQM requires the use of additional software to access primary data elements stored within radiology electronic health records and translate them into data elements that can be ingested by this eCOM. Additional details are included in the Guidance field.

This eCOM is a patient-based measure



Numerator (a = 40 patients)

Denominator (b = 100 patients) - Denominator Exclusions (x = 20 patients)



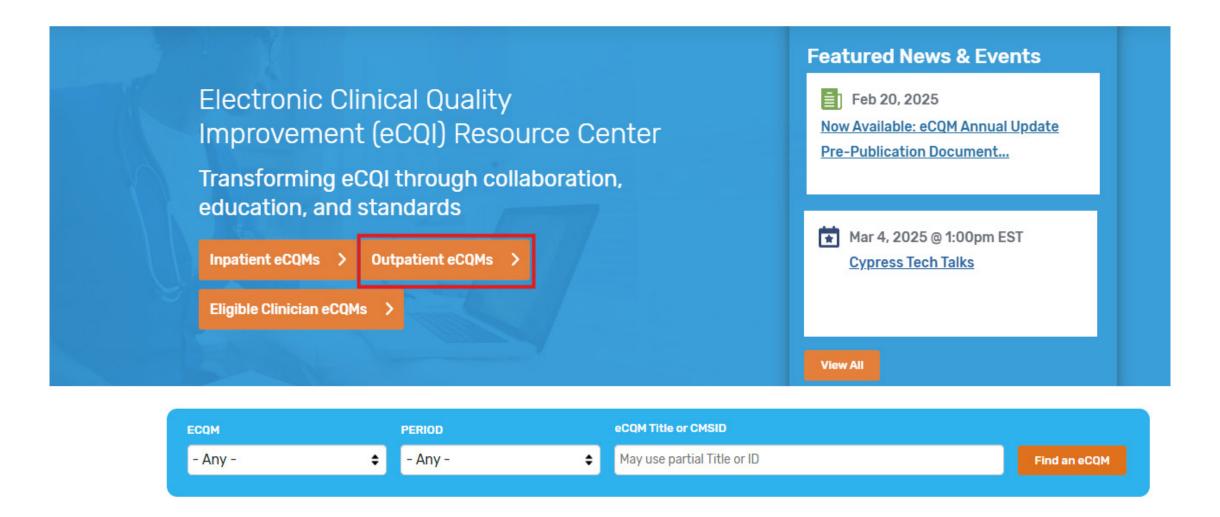




# **Excessive Radiation Dose or Inadequate** Image Quality for Diagnostic Computed Tomography (CT) in Adults Facility – **Outpatient Setting**

### eCQI Resource Center (2)

### https://ecqi.healthit.gov



## **Population Criteria**

Population	IQR Program	Hospital OQR Program
Initial Population	All CT scans in adults aged 18 years and older at the start of the measurement period that have a CT Dose and Image Quality Category and were performed during an inpatient hospitalization during the measurement period.	All CT scans in adults aged 18 years and older at the start of the measurement period that have a CT Dose and Image Quality Category and were performed in a hospital outpatient department (including emergency), during the measurement period, and not part of an inpatient hospitalization.
Denominator	Equals Initial population with a CT Dose and Image Quality Category, a Calculated Global Noise value, and a Calculated CT Size-Adjusted Dose value	
Denominator Exclusions	Denominator, where a CT scan with a CT Dose and Image Quality Category = full body	Same as IQR
Numerator	Calculated CT Size-Adjusted Dose greater than or equal to a threshold specific to the CT Dose and Image Quality Category, or Calculated CT Global Noise value greater than or equal to a threshold specific to the CT Dose and Image Quality Category	Same as IQR

Excessive Radiation
Dose or Inadequate
Image Quality for
Diagnostic Computed
Tomography (CT) in
Adults - HOQR

**Reporting Period** 

This eCQM is an episode-based measure and should be reported for each eligible CT scan performed in a hospital outpatient setting during reporting period.







### Resources

### eCQI Resource Center

#### CMS EH Measures



### Get Started with eCQMs

https://ecqi.healthit.gov/ecqms?qt-tabs ecqm=education



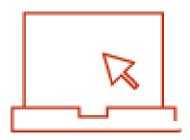
https://ecqi.healthit.gov/cql?qt-tabs cql=2

**Hospitalization with Observation -**

https://www.youtube.com/watch?v=3yqwOU2XcZM&ab channel=CMSHHSgov

What is a Value Set -

https://register.gotowebinar.com/recording/4766956164118938369



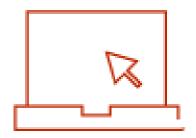






### Resources (2)

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



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

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

ASTP/ONC Issue Tracking System - <a href="https://oncprojectracking.healthit.gov/">https://oncprojectracking.healthit.gov/</a>







### Resources (3)



https://ecqi.healthit.gov/sites/default/files/ecqm/measures/Excessive-Radiation-Measures-Educational-Implementation-Summary\_v2.pdf

### Alara Interest Form to Use Alara for Measure Calculation

https://www.alaragateway.com/contact







### Live Q&A Segment



- 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

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https://www.jointcommission.org/m easurement/quality-measurementwebinars-and-videos/expert-toexpert-webinars/



### **Expert to Expert Webinars**

The Joint Commission's Expert to Expert (EtoE) 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.

Notes: After clicking the link to view a recording, you will be taken to the event landing page and will be required to enter registration fields before the recording begins.

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Expert to Expert Status	⊕ ×	Results 1-8 of 8 in 0.07 seconds
EtoE Current	7	
EtoE Past	1	
		RESOURCE







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pioneersinquality@jointcommission.org



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





# **Addendum – Outpatient Setting Slides**

Excessive Radiation
Dose or Inadequate
Image Quality for
Diagnostic Computed
Tomography (CT) in
Adults - HOQR

### **Measure Calculation**

- The measure will evaluate each included CT exam based on allowable thresholds that are specified by the CT Dose and Image Quality Category.
- An exam is considered out of range if either the Calculated CT Global Noise or the Calculated CT Size-Adjusted Dose is out of range for the CT Dose and Image Quality Category.
- Exams will be evaluated against their corresponding thresholds for the Calculated CT Size-Adjusted Dose in dose length product, and Noise for the specific CT Category

### **HOQR** Measure

### **Initial Population**

All CT scans in adults aged 18 years and older at the start of the measurement period that have a CT Dose and Image Quality Category and were performed during an outpatient hospitalization during the measurement period

### Denominator

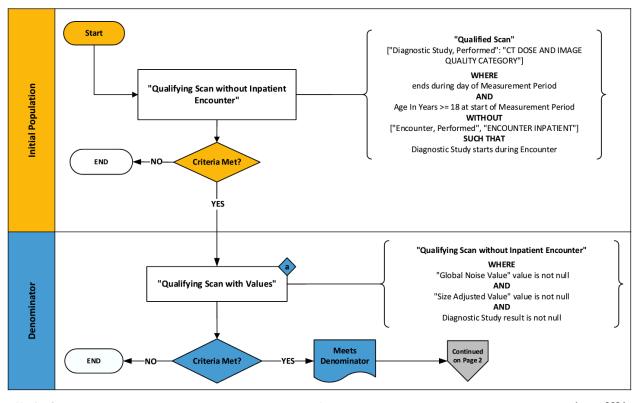
Equals Initial population with a CT Dose and Image Quality Category, a Calculated Global Noise value, and a Calculated CT Size-Adjusted Dose value

### Measure Flow Hospital OQR Measure

2025 eCQM Flow – CMS1206v2: Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults (Facility OQR) CBE# 3663e

\*This flow diagram represents an overview of population criteria requirements. Please refer to the eCQM measure specification for a complete list of definitions, direct reference codes, data or timing elements included in this measure and required for submission.

#### **Measure Flow Diagram**

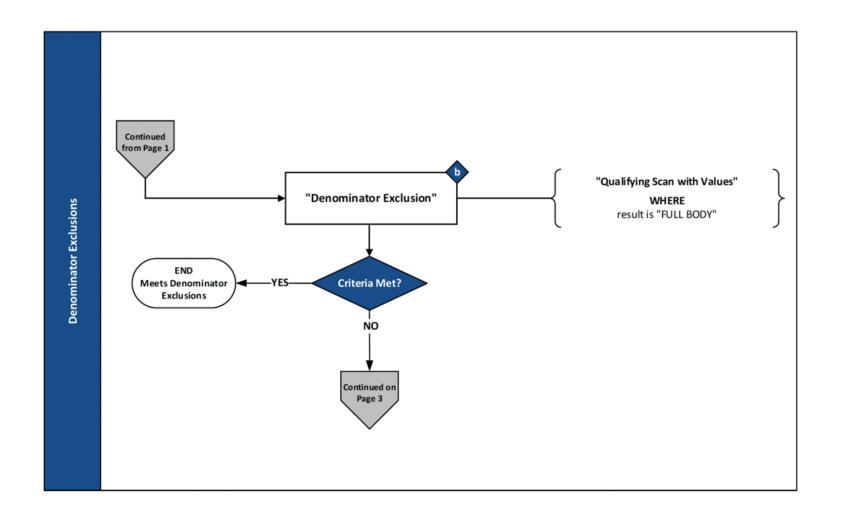


Version 2 1 August 2024

# HOQR Measure Flow Denominator Exclusions

- CT scans with missing patient age or missing CT Dose and Image
   Quality Category are excluded from the initial population.
- CT scans with a missing Calculated Global Noise value or a missing Calculated CT Size-Adjusted Dose value are not included in the denominator.
- CT scans assigned a CT Dose and Image Quality Category (LOINC(R) 96914-7) value using the LOINC(R) answer list (LL5824-9) of full body (LA31771-1) are excluded from the denominator.
- These exams are included in the initial population because they have a non-missing CT Dose and Image Quality Category but are then removed as a Denominator Exclusion because the value is full body, which reflects CT exams that cannot be categorized by anatomical area or by clinical indication, either because they are simultaneous exams of multiple body regions outside of four commonly encountered multiple region groupings, or because there is insufficient data for their classification based on the given diagnosis and procedure codes.

### **HOQR** Denominator Exclusions



### Measure Flow HOQR

### **Numerator**

Each CT scan is assigned to a CT Dose and Image Quality Category

The Calculated CT Global Noise Value and Calculated CT Size Adjusted Dose Value are compared with allowable values specific to the CT Dose and Image Quality Category

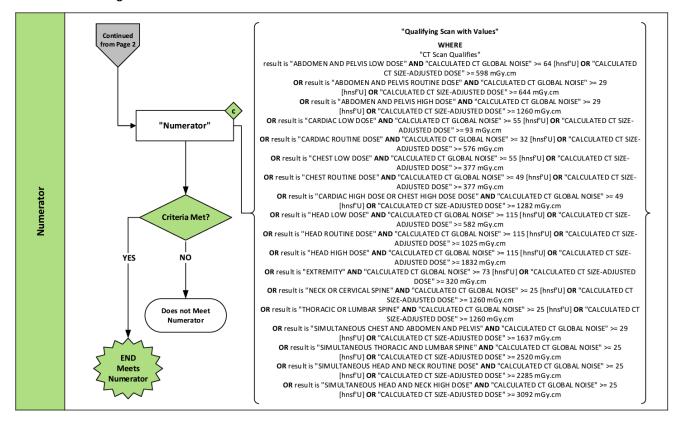
If either the Calculated CT Global Noise Value or the Calculated CT Size Adjusted Dose Value are higher than the thresholds, than the exam is considered out of range

### Measure Numerator- Hospital OQR Measure

### 2025 eCQM Flow – CMS1206v2: Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults (Facility OQR) CBE# 3663e

\*This flow diagram represents an overview of population criteria requirements. Please refer to the eCQM measure specification for a complete list of definitions, direct reference codes, data or timing elements included in this measure and required for submission.

#### **Measure Flow Diagram**



Version 2 3 August 2024

### (=CT Category), noise threshold, size adjusted dose threshold

```
Hospital OQR Measure
Thresholds
```

```
[LA31752-1 (=Abdomen and Pelvis, Low Dose), 64, 598];
[LA31753-9 (=Abdomen and Pelvis, Routine Dose), 29, 644];
[LA31754-7 (=Abdomen and Pelvis, High Dose), 29, 1260];
[LA31755-4 (=Cardiac Low Dose), 55, 93];
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[LA31762-0 (=Head Low Dose), 115, 582];
[LA31763-8 (=Head Routine Dose), 115, 1025];
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[LA31768-7 (=Combined Chest, Abdomen and Pelvis), 29, 1637];
[LA31851-1 (=Combined Thoracic and Lumbar Spine), 25, 2520];
[LA31769-5 (=Combined Head and Neck, Routine Dose), 25, 2285];
[LA31770-3 (=Combined Head and Neck, High Dose), 25, 3092]
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