

Quality ID #361: Optimizing Patient Exposure to Ionizing Radiation: Reporting to a Radiation Dose Index Registry – National Quality Strategy Domain: Patient Safety

2018 OPTIONS FOR INDIVIDUAL MEASURES:
REGISTRY ONLY

MEASURE TYPE:
Structure

DESCRIPTION:

Percentage of total computed tomography (CT) studies performed for all patients, regardless of age, that are submitted to a radiation dose index registry that is capable of collecting at a minimum selected data elements

INSTRUCTIONS:

This measure is to be submitted **each time** a procedure for a CT imaging report is performed during the performance period. There is no diagnosis associated with this measure. This measure may be submitted by eligible clinicians who perform the quality actions described in the measure based on the services provided and the measure-specific denominator coding.

Measure Submission:

The listed denominator criteria is used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions allowed by the measure. The quality-data codes listed do not need to be submitted for registry submissions; however, these codes may be submitted for those registries that utilize claims data.

DENOMINATOR:

All final reports for patients, regardless of age, undergoing a CT procedure

***DENOMINATOR NOTE:** *Signifies that this CPT Category I code is a non-covered service under the Medicare Part B Physician Fee Schedule (PFS). These non-covered services should be counted in the denominator population for registry-based measures.*

Denominator Criteria (Eligible Cases):

All patients regardless of age

AND

Patient procedure during the performance period (CPT): 70450, 70460, 70470, 70480, 70481, 70482, 70486, 70487, 70488, 70490, 70491, 70492, 70496, 70498, 71250, 71260, 71270, 71275, 72125, 72126, 72127, 72128, 72129, 72130, 72131, 72132, 72133, 72191, 72192, 72193, 72194, 73200, 73201, 73202, 73206, 73700, 73701, 73702, 73706, 74150, 74160, 74170, 74174, 74175, 74176, 74177, 74178, 74261, 74262, 74263*, 75571, 75572, 75573, 75574, 75635, 76380, 76497, 77011, 77012, 77013, 77014, 77078, 78072, 0042T

NUMERATOR:

CT studies performed that are reported to a radiation dose index registry that is capable of collecting at a minimum all of the following data elements:

- Manufacturer
- Study description
- Manufacturer's model name
- Patient's weight
- Patient's size
- Patient's sex

- Patient's age
- Exposure time
- X-Ray tube current
- Kilovoltage (kV)
- Mean Volume Computed tomography dose index (CTDIvol)
- Dose-length product (DLP)

Detailed information regarding the patient demographic and scanner data elements included in the Digital Imaging and Communication in Medicine (DICOM) header and CT irradiation event data elements included in the DICOM Supplement 127: CT Radiation Dose Reporting (Dose Structured Report) can be found in the Dose Index Registry Data Dictionary available on the American College of Radiology (ACR) Web site: [Dose Index Registry Data Dictionary](#)

Numerator Options:

Performance Met:

CT studies performed reported to a radiation dose index registry that is capable of collecting at a minimum all necessary data elements (G9327)

OR

Performance Not Met:

CT studies performed not reported to a radiation dose index registry that is capable of collecting at a minimum all necessary data elements, reason not given (G9326)

RATIONALE:

Clinical registries have become an important tool in efforts to improve quality of care. Registries provide a structured mechanism to monitor clinical practice patterns, evaluate healthcare effectiveness and safety, and evaluate patient outcomes. (Gliklich RE, Dreyer NA, 2007) (Bufalino VJ, Masoudi FA, Stranne SK, et al., 2011)

Establishing diagnostic reference levels is vital to helping clinicians determine optimal radiation dosage to produce acceptable image quality. A data registry would allow facilities to compare their CT dose indices to regional and national values enabling imaging providers and the imaging community to measure the effectiveness of dose lowering efforts over time. (ACR, 2008)

CLINICAL RECOMMENDATION STATEMENTS:

The goal in medical imaging is to obtain image quality consistent with the medical imaging task. Diagnostic reference levels are used to manage the radiation dose to the patient. The medical radiation exposure must be controlled, avoiding unnecessary radiation that does not contribute to the clinical objective of the procedure. By the same token, a dose significantly lower than the reference level may also be cause for concern, since it may indicate that adequate image quality is not being achieved. The specific purpose of the reference level is to provide a benchmark for comparison, not to define a maximum or minimum exposure limit. For CT, the diagnostic reference levels are based on the volume CT dose index (CTDIvol). (ACR, 2008)

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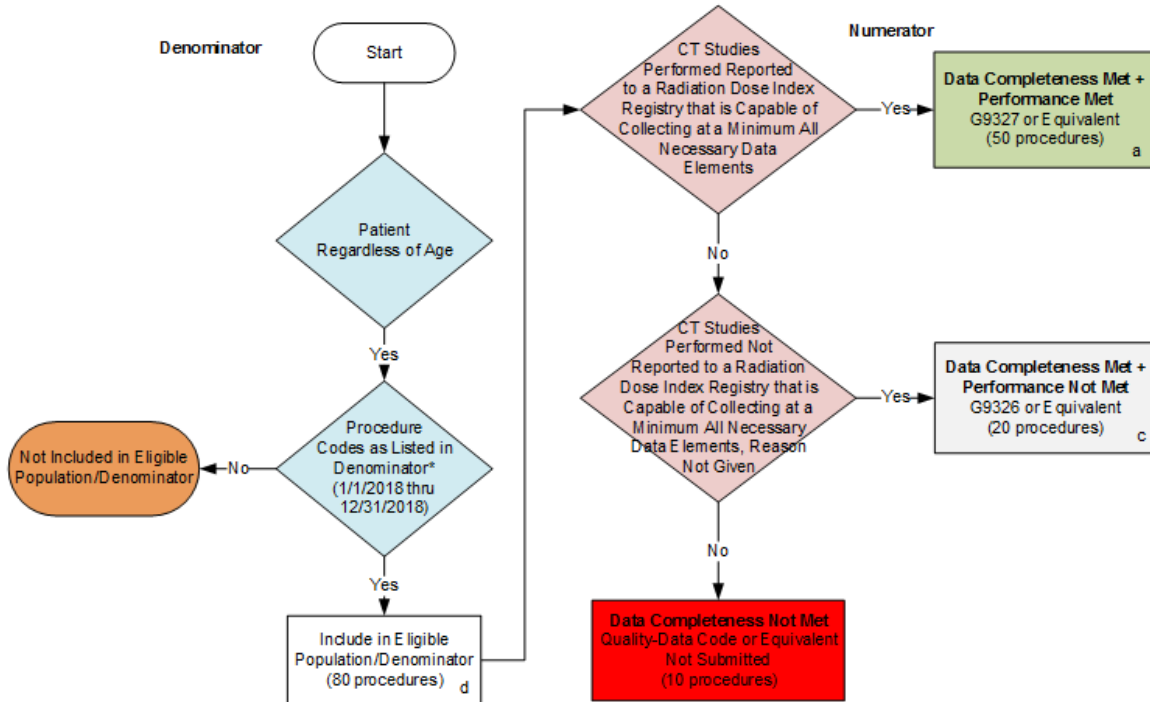
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**2018 Registry Flow for Quality ID #361:
Optimizing Patient Exposure to Ionizing Radiation: Reporting to a Radiation
Dose Index Registry**



SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=50 procedures)} + \text{Performance Not Met (c= 20 procedures)}}{\text{Eligible Population / Denominator (d=80 procedures)}} = \frac{70 \text{ procedures}}{80 \text{ procedures}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=50 procedures)}}{\text{Data Completeness Numerator (70 procedures)}} = \frac{50 \text{ procedures}}{70 \text{ procedures}} = 71.43\%$$

* See the posted Measure Specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Procedure

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**2018 Registry Flow for Quality ID #361:
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Please refer to the specific section of the specification to identify the denominator and numerator information for use in submitting this Individual Specification. This flow is for registry data submission.

1. Start with Denominator
2. Check Patient Age:
 - a. If the All patients, Regardless of Age equals No during the measurement period, do not include in Eligible Patient Population. Stop Processing.
 - b. If the All patient, Regardless of Age equals Yes during the measurement period, proceed to check Procedure Performed.
3. Check Procedure:
 - a. If Procedure as Listed in the Denominator equals No, do not include in Eligible. Stop Processing.
 - b. If Procedure as Listed in the Denominator equals Yes, include in the Eligible Population.
4. Denominator Population:
 - a. Denominator Population is all Eligible Patients in the Denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 80 procedures in the Sample Calculation.
5. Start Numerator
6. Check CT Studies Performed Reported to a Radiation Dose Index Registry that is Capable of Collecting at a Minimum all Necessary Data Elements:
 - a. Check CT Studies Performed Reported to a Radiation Dose Index Registry that is Capable of Collecting at a Minimum all Necessary Data Elements equals Yes, include in Data Completeness Met and Performance Met.
 - b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 50 procedures in the Sample Calculation.
 - c. Check CT Studies Performed Reported to a Radiation Dose Index Registry that is Capable of Collecting at a Minimum all Necessary Data Elements equals No, proceed to Check CT Studies Performed not Reported to a Radiation Dose Index Registry that is Capable at Collecting at a Minimum all Necessary Data Elements, Reason not Given.
7. Check CT Studies Performed not Reported to a Radiation Dose Index Registry that is Capable at Collecting at a Minimum all Necessary Data Elements, Reason not Given:
 - a. Check CT Studies Performed not Reported to a Radiation Dose Index Registry that is Capable at Collecting at a Minimum all Necessary Data Elements, Reason not Given equals Yes, include in Data Completeness Met and Performance Not Met.

- b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 20 procedures in the Sample Calculation.
 - c. Check CT Studies Performed not Reported to a Radiation Dose Index Registry that is Capable at Collecting at a Minimum all Necessary Data Elements, Reason not Given equals No, proceed to Data Completeness Not Met.
8. Check Data Completeness Not Met:
- a. If Data Completeness Not Met, the Quality Data Code or equivalent was not submitted. 10 procedures have been subtracted from the Data Completeness Numerator in Sample Calculation.

SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=50 procedures) + Performance Not Met (c= 20 procedures)}}{\text{Eligible Population / Denominator (d=80 procedures)}} = \frac{70 \text{ procedures}}{80 \text{ procedures}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=50 procedures)}}{\text{Data Completeness Numerator (70 procedures)}} = \frac{50 \text{ procedures}}{70 \text{ procedures}} = 71.43\%$$