Measure #145: Radiology: Exposure Dose or Time Reported for Procedures Using Fluoroscopy – National Quality Strategy Domain: Patient Safety

2017 OPTIONS FOR INDIVIDUAL MEASURES:
REGISTRY ONLY

MEASURE TYPE:
Process

DESCRIPTION:
Final reports for procedures using fluoroscopy that document radiation exposure indices, or exposure time and number of fluorographic images (if radiation exposure indices are not available)

INSTRUCTIONS:
This measure is to be reported **each time** fluoroscopy is performed in a hospital or outpatient setting during the performance period. There is no diagnosis associated with this measure. It is anticipated that eligible clinicians providing the services for procedures using fluoroscopy will submit this measure.

Measure Reporting:
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-based submissions; however, these codes may be submitted for those registries that utilize claims data.

DENOMINATOR:
All final reports for procedures using fluoroscopy

> ***DENOMINATOR NOTE:*** *The final report of the fluoroscopy procedure or fluoroscopy guided procedure includes the final radiology report, definitive operative report, or other definitive procedure report that is communicated to the referring physician, primary care physician, follow-up care team, and/or maintained in the medical record of the performing physician outside the EHR or other medical record of the facility in which the procedure is performed.*
>
> **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):**
> **Patient encounter during the performance period (CPT or HCPCS)**: 0075T, 0202T, 0234T, 0235T, 0236T, 0237T, 0238T, 0338T, 0339T, 22526*, 25606, 25651, 26608, 26650, 26676, 26706, 26727, 27235, 27244, 27245, 27509, 27756, 27759, 28406, 28436, 28456, 28476, 34841, 34842, 34843, 34844, 34845, 34846, 34847, 34848, 36221, 36222, 36223, 36224, 36225, 36226, 36251, 36252, 36253, 36254, 36598, 36901, 36902, 36903, 36904, 36905, 36906, 37182, 37183, 37184, 37187, 37188, 37211, 37212, 37213, 37214, 37215, 37216*, 37217, 37218, 37220, 37221, 37224, 37225, 37226, 37227, 37228, 37229, 37230, 37231, 37236, 37238, 37241, 37242, 37243, 37244, 37246, 37247, 37248, 37249, 43260, 43261, 43262, 43263, 43264, 43265, 43274, 43275, 43276, 43277, 43278, 43752, 47537, 49440, 49441, 49442, 49446, 49450, 49451, 49452, 49460, 49465, 50382, 50384, 50385, 50386, 50387, 50389, 50590, 61623, 61630, 61635, 61640*, 61645, 61650, 62263, 62264, 62280, 62281, 62282, 62302, 62303, 62304, 62305, 64610, 70010, 70015, 70170, 70332, 70370, 70371, 70390, 71023, 71034, 72240, 72255, 72265, 72270, 72275, 72285, 72295, 73040, 73085, 73115, 73525, 73580, 73615, 74190, 74210, 74220, 74230, 74235, 74240, 74241, 74245, 74246, 74247, 74249, 74251, 74260, 74270, 74280, 74283, 74290, 74300, 74328, 74329, 74330, 74340, 74355, 74360, 74363, 74425, 74430, 74440, 74445, 74450, 74455, 74470, 74485, 74740, 74742, 75600, 75605, 75625, 75630, 75658, 75705, 75710, 75716, 75726, 75731, 75733, 75736, 75741, 75743,

75746, 75756, 75801, 75803, 75805, 75807, 75809, 75810, 75820, 75822, 75825, 75827, 75831, 75833, 75840, 75842, 75860, 75870, 75872, 75880, 75885, 75887, 75889, 75891, 75893, 75894, 75898, 75901, 75902, 75952, 75953, 75954, 75956, 75957, 75958, 75959, 75970, 75984, 76000, 76001, 76080, 76120, 76496, 77001, 77002, 77003, 92611, 93451, 93452, 93453, 93454, 93455, 93456, 93457, 93458, 93459, 93460, 93461, 93503, 93505, 93530, 93531, 93532, 93533, 93580, 93581, 93583, G0106, G0120, G0122* G0278

NUMERATOR:
Final reports for procedures using fluoroscopy that include radiation exposure indices, or exposure time and number of fluorographic images (if radiation exposure indices are not available)

Definition:
Radiation exposure indices - For the purposes of this measure, radiation exposure indices should, if possible, include at least one of the following:
1. Skin dose mapping
2. Peak skin dose (PSD)
3. Reference air kerma (Ka,r)
4. Kerma-area product (P_{KA}) or Dose area product (DAP)

When reporting indices the report must clearly state what radiation quantity is being reported, that is only reporting dose in mGy is insufficient. PSD in mGy is very different from Ka,r in mGy. As an example, PSD = 10 mGy or Ka,r = 10 mGy.

If the fluoroscopic equipment does not automatically provide any of the above radiation exposure indices, exposure time and the number of fluorographic images taken during the procedure may be used.

NUMERATOR NOTE: *In interventional radiology procedures with runs, dose indices are displayed on the console and in the radiation dose structured report (RDSR). For instruments without dose indicator measurement capability, report the overall fluoroscopic time and the number of runs done where additional exposure (fluoroscopic or x-ray) occurs.*

"Last image hold" is part of the fluoroscopic exam and would be included in the total fluoroscopic time. No additional radiation is involved, so the image would not be counted.

Count images where the patient received or potentially received any exposure, fluorographic or radiographic (x-ray).

Numerator Options:

Performance Met:	Radiation exposure indices, OR exposure time and number of fluorographic images in final report for procedures using fluoroscopy, documented **(G9500)**
OR	
Performance Not Met:	Radiation exposure indices, OR exposure time and number of fluorographic images not documented in final report for procedure using fluoroscopy, reason not given **(G9501)**

RATIONALE:
Increasing physician awareness of patient exposure to radiation is an important step towards reducing the potentially harmful effects of radiation as a result of imaging studies. One study by Darling et al found a significant correlation between documentation of fluoroscopy time by the radiologist in the dictated radiology report and reduced overall

fluoroscopy time. Additional studies demonstrate that providing physicians with feedback regarding their fluoroscopy time leads to a reduction in average fluoroscopy times.

CLINICAL RECOMMENDATION STATEMENTS:

All available radiation dose data should be recorded in the patient's medical record. If cumulative air kerma or air kerma-area-product data are not available, the fluoroscopic exposure time and the number of acquired images (radiography, cine, or digital subtraction angiography) should be recorded in the patient's medical record. (ACR, 2013)

For the present, and for the purpose of this guideline, adequate recording of dose metrics is defined as documentation in the patient record of at least one of the following for all interventional procedures requiring fluoroscopy (in descending order of desirability): skin dose mapping, PSD, Ka,r, P_{KA}, and fluoroscopic time/number of fluorographic images. Note, however, that this is adequate recording; this document recommends recording of all available dose metrics. (SIR, 2012)

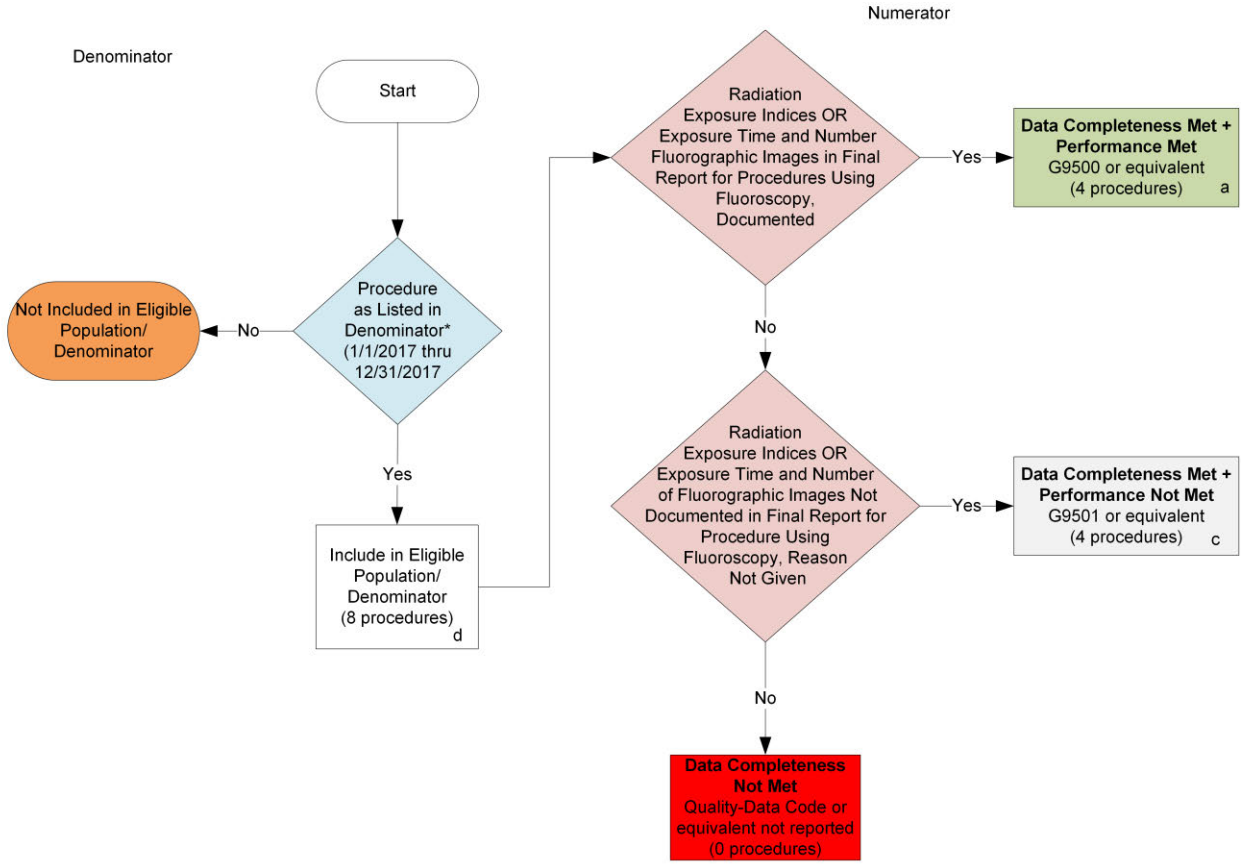
[ACR] should now encourage practices to record actual fluoroscopy time for all fluoroscopic procedures. The fluoroscopy time for various procedures (eg, upper gastrointestinal, pediatric voiding cystourethrography, diagnostic angiography) should then be compared with benchmark figures…More complete patient radiation dose data should be recorded for all high-dose interventional procedures, such as embolizations, transjugular intrahepatic portosystemic shunts, and arterial angioplasty or stent placement anywhere in the abdomen and pelvis. (Amis et al., ACR, 2007)

Measure & record patient radiation dose:

- Record fluoroscopy time
- Record available measures - DAP (dose area product), cumulative dose, skin dose (NCI, 2005)

P_{KA}, also known as kerma-area product (KAP) or dose-area product (DAP), is the integral of air kerma (the energy extracted from an x-ray beam per unit mass of air in a small irradiated air volume; for diagnostic x-rays, the dose delivered to that volume of air) across the entire x-ray beam emitted from the x-ray tube. It is a surrogate measure of the amount of energy delivered to the patient, and thus a reasonable indicator of the risk of stochastic effects. The symbol PKA_{KA} is the notation recommended by the International Commission on Radiation Units and Measurements (ICRU, 2012).

2017 Registry Individual Measure Flow
#145: Radiology: Exposure Dose or Time Reported for Procedures Using Fluoroscopy



SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a=4 procedures) + Performance Not Met (c=4 procedures) = 8 procedures = **100.00%**

Eligible Population / Denominator (d=8 procedures) = 8 procedures

Performance Rate=

Performance Met (a=4 procedures) = 4 procedures = **50.00%**

Data Completeness Numerator (8 procedures) = 8 procedures

*See the posted Measure Specification for specific coding and instructions to report this measure. This measure is to be reported each time fluoroscopy is performed in a hospital or outpatient setting during the performance period (1/1/2017 thru 12/31/2017).

NOTE: Reporting Frequency: Procedure

v1

2017 Registry Individual Measure Flow
#145: Radiology: Exposure Dose or Time Reported for Procedures Using Fluoroscopy

Please refer to the specific section of the Measure Specification to identify the denominator and numerator information for use in reporting this Individual Measure.

1. Start with Denominator
2. Check Encounter Performed:
    a. If Encounter as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If Encounter as Listed in the Denominator equals Yes, include in the Eligible Population.
3. 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 8 procedures in the sample calculation.
4. Start Numerator
5. Check Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images in Final Report for Procedures using Fluoroscopy, Documented:
    a. If Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images in Final Report for Procedures using Fluoroscopy, Documented 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 4 procedures in Sample Calculation.
    c. If Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images in Final Report for Procedures using Fluoroscopy, Documented equals No, proceed to Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images Not Documented in Final Report for Procedures using Fluoroscopy, Reason Not Given.
6. Check Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images Not Documented in Final Report for Procedures using Fluoroscopy, Reason Not Given:
    a. If Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images Not Documented in Final Report for Procedures using Fluoroscopy, 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 4 procedures in the Sample Calculation.
    c. If Radiation Exposure Indices OR Exposure Time and Number Fluorographic Images Not Documented in Final Report for Procedures using Fluoroscopy, Reason Not Given equals No, proceed to Data Completeness Not Met.

7. Check Data Completeness Not Met:

    a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not reported. 0 procedures has been subtracted from the data completeness numerator in the sample calculation.

SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a=4 procedures) + Performance Not Met (c=4 procedures) = 8 procedures = **100.00%**

Eligible Population / Denominator (d=8 procedures) = 8 procedures

Performance Rate=

Performance Met (a=4 procedures) = 4 procedures = **50.00%**

Data Completeness Numerator (8 procedures) = 8 procedures