

Quality ID #145: Radiology: Exposure Dose Indices Reported for Procedures Using Fluoroscopy

2026 COLLECTION TYPE:

MERIT-BASED INCENTIVE PAYMENT SYSTEM (MIPS) CLINICAL QUALITY MEASURE (CQM)

MEASURE TYPE:

Process – High Priority

DESCRIPTION:

Final reports for procedures using fluoroscopy that document radiation exposure indices.

INSTRUCTIONS:

Reporting Frequency:

This measure is to be submitted each time a denominator eligible procedure as defined in the denominator criteria is performed.

Intent and Clinical Applicability:

This measure is intended to reflect the quality of services provided for patients who undergo a procedure using fluoroscopy. There is no diagnosis associated with this measure. This measure may be submitted by Merit-based Incentive Payment System (MIPS) eligible clinicians who perform the quality actions as defined by the numerator based on the services provided and the measure-specific denominator coding.

Measure Strata and Performance Rates:

This measure contains one strata defined by a single submission criteria.

This measure produces a single performance rate.

Implementation Considerations:

For the purposes of MIPS implementation, this procedure measure is submitted each time a procedure is performed during the performance period.

Telehealth:

NOT TELEHEALTH ELIGIBLE: This measure is not appropriate for nor applicable to the telehealth setting. This measure is procedure based and therefore doesn't allow for the denominator criteria to be conducted via telehealth. It would be appropriate to remove these patients from the denominator eligible patient population. Telehealth eligibility is at the measure level for inclusion within the denominator eligible patient population and based on the measure specification definitions which are independent of changes to coding and/or billing practices.

Measure Submission:

The quality data codes listed do not need to be submitted by MIPS eligible clinicians, groups, or third party intermediaries that utilize this collection type for submissions; however, these codes may be submitted for those third party intermediaries that utilize Medicare Part B claims data. The coding provided to identify the measure criteria: Denominator or Numerator, may be an example of coding that could be used to identify patients that meet the intent of this clinical topic. When implementing this measure, please refer to the 'Reference Coding' section to determine if other codes or code languages that meet the intent of the criteria may also be used within the medical record to identify and/or assess patients. For more information regarding Application Programming Interface (API), please refer to the Quality Payment Program (QPP) website.

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 MIPS CQMs.*

Denominator Criteria (Eligible Cases):

Patient procedure 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, 33477, 33741, 33745, 33897, 33900, 33901, 33902, 33903, 34703, 34704, 34705, 34706, 34718, 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, 37236, 37238, 37241, 37242, 37243, 37244, 37246, 37248, 37254, 37256, 37258, 37260, 37263, 37265, 37267, 37269, 37271, 37273, 37275, 37277, 37280, 37282, 37284, 37286, 37288, 37290, 37292, 37294, 37296, 37298, 43260, 43261, 43262, 43263, 43264, 43265, 43274, 43275, 43276, 43277, 43278, 43752, 47537, 49440, 49441, 49442, 49446, 49450, 49451, 49452, 49460, 50382, 50384, 50385, 50386, 50387, 50389, 61623, 61630, 61635, 61640*, 61645, 61650, 62263, 62264, 62280, 62281, 62282, 62302, 62303, 62304, 62305, 70010, 70015, 70170, 70332, 70370, 70371, 70390, 72240, 72255, 72265, 72270, 72285, 72295, 73040, 73085, 73115, 73525, 73580, 73615, 74210, 74220, 74221, 74235, 74240, 74246, 74251, 74270, 74280, 74300, 74328, 74329, 74330, 74340, 74355, 74360, 74363, 74425, 74440, 74445, 74450, 74470, 74485, 74742, 75600, 75605, 75625, 75630, 75705, 75710, 75716, 75726, 75731, 75733, 75736, 75741, 75743, 75746, 75756, 75801, 75803, 75805, 75807, 75810, 75825, 75827, 75831, 75833, 75840, 75860, 75870, 75872, 75880, 75885, 75887, 75889, 75891, 75893, 75894, 75898, 75901, 75902, 75970, 76000, 76080, 76496, 77001, 77002, 77003, 92611, 93451, 93452, 93453, 93454, 93455, 93456, 93457, 93458, 93459, 93460, 93461, 93503, 93505, 93580, 93581, 93593, 93594, 93595, 93596, 93597, 93583

NUMERATOR:

Final reports for procedures using fluoroscopy that include radiation exposure indices.

Definition:

Radiation exposure indices - For the purposes of this measure, "radiation exposure indices" should include at least one of the following:

1. Reference air kerma ($K_{a,r}$) in Gy or mGy
2. Kerma-area product (P_{KA}) or Dose area product (DAP) in $\mu\text{Gy}^*\text{m}^2$, mGy^*cm^2 (or similar)
3. Peak skin dose (PSD) in Gy or mGy

When reporting indices the report must clearly state what radiation quantity is being submitted, that is only reporting dose in mGy is insufficient. PSD in mGy is very different from $K_{a,r}$ in mGy. As an example, PSD = 10 mGy or $K_{a,r}$ = 10 mGy would meet numerator performance, but "10 mGy" alone would not.

Note: When reporting reference air kerma or kerma-area product for biplane systems, the value should be reported as the sum of both planes (or the value for each plane should be reported individually).

Numerator Instructions:

Documentation: Dose information in the final report may be located in a variety of sources and should be available to the referring physician on receipt of report.

NUMERATOR NOTE:

In interventional radiology procedures with runs, dose indices are displayed on the console and in the radiation dose structured report (RDSR).

Numerator Options:

Performance Met:

Radiation exposure indices documented in final report for procedure using fluoroscopy (G9500)

OR

Performance Not Met:

Radiation exposure indices 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. Studies have shown that dose monitoring for fluoroscopy procedures has resulted in an overall reduction in patient radiation exposure. (RSNA, 2019) Proper identification and management of patients receiving high doses of radiation from fluoroscopy procedures are essential elements of patient care due to the slowly developing nature of radiation-induced tissue reactions. (AAPM, 2022)

CLINICAL RECOMMENDATION STATEMENTS:

All available radiation dose data should be recorded in the patient's medical record.

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): $K_{a,r}$, P_{KA} , and PSD. Reference air kerma is the most useful and widely available of these metrics as it is required to be displayed on all fluoroscopes sold in the United States as of June 2006, however all three metrics are sufficient in estimating radiation exposure from fluoroscopic procedures. (AAPM, 2022)

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)

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 P_{KA} is the notation recommended by the International Commission on Radiation Units and Measurements (ICRU, 2012).

REFERENCES:

Miller DL, Balter S, Dixon RG, et al; for Society of Interventional Radiology Standards of Practice Committee. Quality improvement guidelines for recording patient radiation dose in the medical record for fluoroscopically guided procedures. *J Vasc Interv Radiol.* 2012;23:11-18. doi:10.1016/j.jvir.2011.09.004.

Amis ES Jr., Butler PF, Applegate KE, et al. American College of Radiology white paper on radiation dose in medicine. *J Am Coll Radiol.* 2007;4:272-284. doi:10.1016/j.jacr.2007.03.002.

National Cancer Institute; National Institutes of Health. Interventional Fluoroscopy: Reducing Radiation Risks for Patients and Staff. <http://www.cancer.gov/cancertopics/causes/radiation/interventionalfluoroscopy/page7>. Published April 18, 2005. Accessed March 21, 2014.

Fisher, R. F., Applegate, K. E., Berkowitz, L. K., Christianson, O., Dave, J. K., DeWeese, L., Harris, N., Jafari, M. E., Jones, A. K., Kobistek, R. J., Loughran, B., Marous, L., Miller, D. L., Schueler, B., Schwarz, B. C., Springer, A., & Wunderle, K. A. (2022). AAPM Medical Physics Practice Guideline 12.a: Fluoroscopy dose management. *Journal of Applied Clinical Medical Physics*, 23(3), Article e13526. <https://doi.org/10.1002/acm2.13526>

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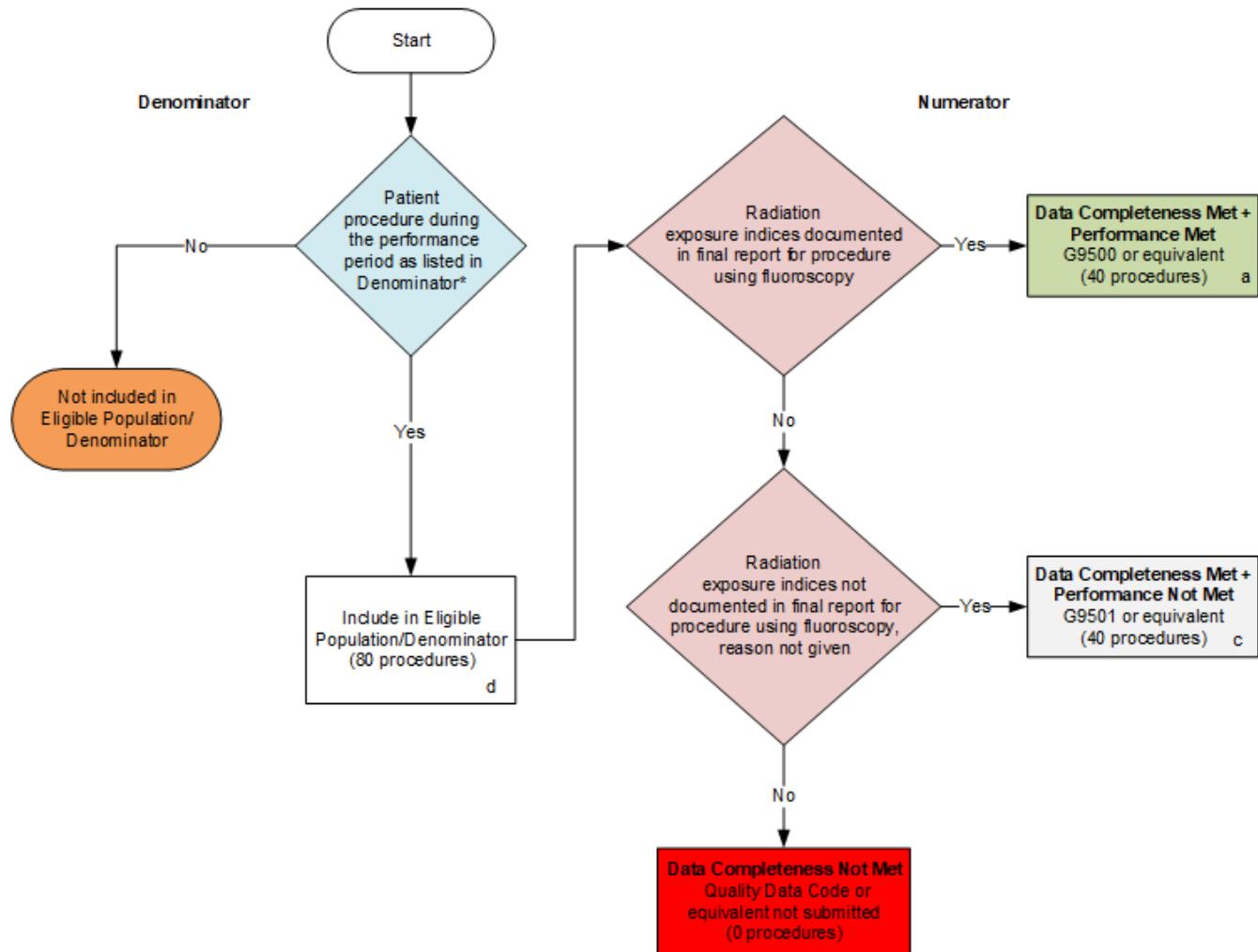
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2026 Clinical Quality Measure Flow for Quality ID #145: Radiology: Exposure Dose Indices Reported for Procedures Using Fluoroscopy

Disclaimer: Refer to the measure specification for specific coding and instructions to submit this measure.



SAMPLE CALCULATIONS

Data Completeness:

$$\frac{\text{Performance Met (a=40 procedures)} + \text{Performance Not Met (c=40 procedures)}}{\text{Eligible Population / Denominator (d=80 procedures)}} = \frac{80 \text{ procedures}}{80 \text{ procedures}} = 100.00\%$$

Performance Rate:

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (80 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$

*See the posted measure specification for specific coding and instructions to submit this measure.
NOTE : Submission Frequency: Procedure

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The measure diagrams were developed by CMS as a supplemental resource to be used in conjunction with the measure specifications. They should not be used alone or as a substitution for the measure specification.

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2026 Clinical Quality Measure Flow Narrative for Quality ID #145: Radiology: Exposure Dose Indices Reported for Procedures Using Fluoroscopy

Disclaimer: Refer to the measure specification for specific coding and instructions to submit this measure.

1. Start with Denominator
2. Check *Patient procedure during the performance period as listed in Denominator**:
 - a. If *Patient procedure during the performance period as listed in Denominator** equals No, do not include in *Eligible Population/Denominator*. Stop processing.
 - b. If *Patient procedure during the performance period as listed in Denominator** equals Yes, include in *Eligible Population/Denominator*.
 - c. Denominator Population:
 - Denominator Population is all Eligible Procedures 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.
3. Start Numerator
4. Check *Radiation exposure indices documented in final report for procedure using fluoroscopy*:
 - a. If *Radiation exposure indices documented in final report for procedure using fluoroscopy* equals Yes, include in *Data Completeness Met and Performance Met*.
 - *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 40 procedures in the Sample Calculation.
 - b. If *Radiation exposure indices documented in final report for procedure using fluoroscopy* equals No, proceed to check *Radiation exposure indices not documented in final report for procedure using fluoroscopy, reason not given*.
5. Check *Radiation exposure indices not documented in final report for procedure using fluoroscopy, reason not given*:
 - a. If *Radiation exposure indices not documented in final report for procedure using fluoroscopy, reason not given* equals Yes, include in *Data Completeness Met and Performance Not Met*.
 - *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 40 procedures in the Sample Calculation.
 - b. If *Radiation exposure indices not documented in final report for procedure using fluoroscopy, reason not given* equals No, proceed to check *Data Completeness Not Met*.
6. Check *Data Completeness Not Met*:
 - a. If *Data Completeness Not Met*, the Quality Data Code was not submitted. 0 procedures have been subtracted from the Data Completeness Numerator in the Sample Calculation.

Sample Calculations

Data Completeness equals Performance Met (a equals 40 procedures) plus Performance Not Met (c equals 40 procedures) divided by Eligible Population/Denominator (d equals 80 procedures). All equals 80 procedures divided by 80 procedures. All equals 100.00 percent.

Performance Rate equals Performance Met (a equals 40 procedures) divided by Data Completeness Numerator (80 procedures). All equals 40 procedures divided by 80 procedures. All equals 50.00 percent.

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

NOTE: Submission Frequency: Procedure

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