



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

### Brief Measure Information

**NQF #: 0510**

**De.2. Measure Title:** Exposure time reported for procedures using fluoroscopy

**Co.1.1. Measure Steward:** American College of Radiology

**De.3. Brief Description of Measure:** Percentage of final reports for procedures using fluoroscopy that include documentation of radiation exposure or exposure time

**1b.1. Developer Rationale:** Fluoroscopically guided procedures are an integral to current day medicine. However, these procedures may incur risk of radiation injury to the skin (1,2). These injuries may be painful, disfiguring, and long-lasting (3). Radiation-induced effects may be deterministic or stochastic. Stochastic effects are those in which the probability of occurrence is assumed to increase with increasing dose but whose severity is independent of total dose. Radiation-induced cancer is an example. Deterministic effects are those that occur in individuals who receive greater than a threshold dose; the severity of the effect varies with the dose above the threshold. An example is radiation-induced erythema. These effects are also termed tissue effects. Either could occur from procedures using fluoroscopy. Therefore, the use of fluoroscopy in medical institutions must be proactively managed in order to optimize patient radiation dose and take into account risks and benefits.

Evaluating an individual patient for radiation induced effects following a fluoroscopic procedure cannot be predicted unless that patient's radiation history is known. This serves as rationale for measuring recording of patient radiation dose. Monitoring and recording patient dose data can also be valuable for both quality-assurance purposes and for improving patient safety, as radiation dose may be optimized based on feedback to the procedure operator.

Clinical practice guidelines used to support this measure recommend monitoring and recording patient dose for procedures using fluoroscopy in order to manage radiation dose from fluoroscopically guided invasive and interventional procedures.

1. National Council on Radiation Protection and Measurements. Radiation dose management for fluoroscopically guided interventional medical procedures.

Report No. 168. Bethesda, MD: NCRP, 2011.

2. Koenig TR, Mettler FA, Wagner LK. Skin injuries from fluoroscopically guided procedures: part 2, review of 73 cases and recommendations for minimizing dose delivered to the patient. AJR Am J Roentgenol 2001; 177:13–20.

3. Balter S, Hopewell JW, Miller DL, Wagner LK, Zelefsky MJ. Fluoroscopically guided interventional procedures: a review of radiation effects on patients' skin and hair. Radiology 2010; 254:326–341.

**S.4. Numerator Statement:** Final reports for procedures using fluoroscopy that include documentation of radiation exposure or exposure time

**S.7. Denominator Statement:** All final reports for procedures using fluoroscopy

**S.10. Denominator Exclusions:** No exclusions

**De.1. Measure Type:** Process

**S.23. Data Source:** Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Paper Medical Records

**S.26. Level of Analysis:** Clinician : Group/Practice, Clinician : Individual

**IF Endorsement Maintenance – Original Endorsement Date:** Oct 28, 2010 **Most Recent Endorsement Date:** Oct 28, 2008

**IF this measure is included in a composite, NQF Composite#/title:**

IF this measure is paired/grouped, NQF#/title:

**De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?**

## 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.**

### 1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

[MeasSubm\\_MeasEvidence\\_0510\\_01\\_2014\\_Final.docx](#)

### 1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

#### 1b.1. Briefly explain the rationale for this measure (e.g., the benefits or improvements in quality envisioned by use of this measure)

Fluoroscopically guided procedures are an integral to current day medicine. However, these procedures may incur risk of radiation injury to the skin (1,2). These injuries may be painful, disfiguring, and long-lasting (3). Radiation-induced effects may be deterministic or stochastic. Stochastic effects are those in which the probability of occurrence is assumed to increase with increasing dose but whose severity is independent of total dose. Radiation-induced cancer is an example.

Deterministic effects are those that occur in individuals who receive greater than a threshold dose; the severity of the effect varies with the dose above the threshold. An example is radiation-induced erythema. These effects are also termed tissue effects. Either could occur from procedures using fluoroscopy. Therefore, the use of fluoroscopy in medical institutions must be proactively managed in order to optimize patient radiation dose and take into account risks and benefits.

Evaluating an individual patient for radiation induced effects following a fluoroscopic procedure cannot be predicted unless that patient's radiation history is known. This serves as rationale for measuring recording of patient radiation dose. Monitoring and recording patient dose data can also be valuable for both quality-assurance purposes and for improving patient safety, as radiation dose may be optimized based on feedback to the procedure operator.

Clinical practice guidelines used to support this measure recommend monitoring and recording patient dose for procedures using fluoroscopy in order to manage radiation dose from fluoroscopically guided invasive and interventional procedures.

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2. Koenig TR, Mettler FA, Wagner LK. Skin injuries from fluoroscopically guided procedures: part 2, review of 73 cases and recommendations for minimizing dose delivered to the patient. AJR Am J Roentgenol 2001; 177:13–20.
3. Balter S, Hopewell JW, Miller DL, Wagner LK, Zelefsky MJ. Fluoroscopically guided interventional procedures: a review of radiation effects on patients' skin and hair. Radiology 2010; 254:326–341.

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.**

This measure has been included in the Physician Quality Reporting System since 2009 as Measure #145.

Shown below are national average performance rates as reported in the CMS Report: 2011 Reporting Experience Including Trends (2008-2012) Physician Quality Reporting System and Electronic Prescribing (eRx) Incentive Program, APPENDIX, Table A23. Reporting and Performance Information by Individual Measure for the Physician Quality Reporting System (2008 to 2011).

Year	Performance Rate
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2009 41.6%  
2010 48.1%  
2011 54.1%  
2012 67.1%

The performance rate was calculated as the count of reported instances where performance was met (numerator) divided by the total number of reported instances that excluded reported exclusions (i.e., performance denominator).

(2012 rate was pulled from the CMS PY13 Prior Year Benchmark Report for the Value Modifier program, link:

<http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/PY2013-Prior-Year-Benchmarks-.pdf>

While these rates do show a steady increase in performance, the 2012 score still indicates that 32.9% of patients reported on did not receive optimal care. Additionally, the percentage of eligible professionals that could have reported the measure remains low; the performance rate is not known for those who did not report. Data below also from the CMS Report: 2011 Reporting Experience Including Trends (2008-2012) Physician Quality Reporting System and Electronic Prescribing (eRx) Incentive Program, APPENDIX, Table A22. Eligible Professional (EP) Eligibility and Participation Information by Individual Measure for the Physician Quality Reporting System (2008 to 2011).

Year Reporting Rate

2009 6.1%  
2010 8.7%  
2011 12.3%

While these rates do show a steady increase in both reporting and performance, the 2012 score still indicates that 32.9% of patients reported on did not receive optimal care. Additionally, the percentage of eligible professionals that could have reported the measure remains low; the performance rate is not known for those who did not report. Data below also from the CMS Report: 2011 Reporting Experience Including Trends (2008-2012) Physician Quality Reporting System and Electronic Prescribing (eRx) Incentive Program, APPENDIX, Table A22. Eligible Professional (EP) Eligibility and Participation Information by Individual Measure for the Physician Quality Reporting System (2008 to 2011).

Year Reporting Rate

2009 6.1%  
2010 8.7%  
2011 12.3%

Additionally, based on data from a Medicare PQRS measure report of claims data In 2011, 108,364 eligible professionals could have reported the measure of which only 12% did report. Over 95,000 eligible professional (EP) did not report on the measure. Assuming that those EPs who did not report the PQRS measure also did not record fluoroscopy dose/time in the report, then at a minimum, at least 95,000 patients who had a fluoroscopy procedure did not have radiation dose/time reported for them. In addition, of the patients of 1300 professionals (12.3%) who reported on the measure, nearly half the patients (performance rate = 54.1%) did not have radiation dose/time on their final report. This points to a persistent gap, and leaves room for additional improvement.

Viewed another way, using the same Medicare PQRS measure report, of the 5 million Medicare patients who had a fluoroscopic procedure, only 1 million had the measure reported for them, and only 556,000 had a radiation dose/time included in their report.

Exact numbers:

5165974 – eligible patients

1005416 - reported

556535 – measure met  
1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

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1. CMS Report: 2011 Reporting Experience Including Trends (2008-2012) Physician Quality Reporting System and Electronic Prescribing (eRx) Incentive Program, APPENDIX, Table A23. Reporting and Performance Information by Individual Measure for the

Physician Quality Reporting System (2008 to 2011)

2. CMS PY13 Prior Year Benchmark Report for the Value Modifier program, link: <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/PY2013-Prior-Year-Benchmarks-.pdf>

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.*

We are not aware of any relevant disparities that have been identified.

We encourage the results of this measure to be stratified by race, ethnicity, primary language, and gender, and have included these variables as recommended data elements to be collected.

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.**

The PCPI advocates that performance measure data should, where possible, be stratified by race, ethnicity, and primary language to assess disparities and initiate subsequent quality improvement activities addressing identified disparities, consistent with recent national efforts to standardize the collection of race and ethnicity data.

A 2008 NQF report endorsed 45 practices including stratification by the aforementioned variables (1). A 2009 IOM report "recommends collection of the existing Office of Management and Budget (OMB) race and Hispanic ethnicity categories as well as more fine-grained categories of ethnicity (referred to as granular ethnicity and based on one's ancestry language need (a rating of spoken English language proficiency of less than very well and one's preferred language of health-related encounters)." (2)

1. National Quality Forum Issue Brief (no. 10) Closing the Disparities Gap in Healthcare Quality with Performance Measurement and Public Reporting. Washington, DC: NWF, August 2008.

2. Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. March 2010. AHRQ Publication No. 10-0058-EF. Agency for Healthcare Research and Quality, Rockville, MD. Available at: <http://www.ahrq.gov/research/iomracereport>. Accessed May 25, 2010.

**1c. High Priority** (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

**1c.1. Demonstrated high priority aspect of healthcare**

Affects large numbers, Frequently performed procedure, High resource use, Patient/societal consequences of poor quality

**1c.2. If Other:**

**1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare.**

**List citations in 1c.4.**

Data suggests that the lifetime risk for cancer can be increased, albeit by a small amount, with frequent or repeated exposure to ionizing radiation, including procedures using fluoroscopy. (NCI, 2002) The BEIR report concluded that "the linear no-threshold model (LNT) provided the most reasonable description of the relation between low-dose exposure to ionizing radiation and the incidence of solid cancers that are induced by ionizing radiation." (NRC, 2006) In order to monitor these long term effects, the exposure time or radiation dose that a patient receives as a result of the procedure should be measured and recorded in the patient's record.

Complications associated with high doses of fluoroscopy began to be observed and published in the 1990's. By 1994, the Food and Drug Administration (FDA) issued an advisory because of the number of reports of injuries received (now on FDA website at <http://www.fda.gov/cdrh/fluor.html>).

The number of fluoroscopically guided procedures has consistently increased because of overall benefit to patients and uptake of more sophisticated fluoroscopic machines and systems. Interventional fluoroscopic procedures account for nearly 14% (0.43 millisieverts) of the collective dose to the US population from x-ray procedures (about 3 millisieverts), making them the third highest

source of dose.(NCRP, 2011)

**1c.4. Citations for data demonstrating high priority provided in 1a.3**

National Cancer Institute (NCI), The Society for Pediatric Radiology (SPR). Brochure: Radiation & pediatric computed tomography. A guide for health care providers. 2002. Available at: <http://www.cancer.gov/cancertopics/causes/radiation-risks-pediatric-CT.pdf>.

Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation, National Research Council. Health Risks From Exposure to Low Levels of Ionizing Radiation BEIR VII-Phase 2. Washington, DC: National Academies Press; 2006.

National Council on Radiation Protection and Measurements. Ionizing radiation exposure of the population of the United States. NCRP Report No. 160. Bethesda, Maryland: National Council on Radiation Protection and Measurements.

**1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)**

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

Cancer

**De.6. Cross Cutting Areas** (check all the areas that apply):

Care Coordination, Safety

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

<http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/radiology-worksheets.pdf> and <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/MeasuresCodes.html>

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

**Attachment:**

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

No data dictionary Attachment:

**S.3. For endorsement maintenance**, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

The CPT1 © codes used in the measure denominator are updated on an annual basis to reflect current procedures where fluoroscopy is always used.

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Final reports for procedures using fluoroscopy that include documentation of radiation exposure or exposure time

**S.5. Time Period for Data** (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

**S.6. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)  
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Radiation exposure or exposure time in final report for procedure using fluoroscopy, documented

CPT Category II code: 6045F

**S.7. Denominator Statement** (Brief, narrative description of the target population being measured)

All final reports for procedures using fluoroscopy

**S.8. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

**S.9. Denominator Details** (All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

All final reports for procedures using fluoroscopy (codes where fluoroscopy is not always used are not included)

CPT® Procedure Code OR HCPCS G-Code: 0075T, 0234T, 0235T, 0238T, 25606, 25651, 26608, 26650, 26676, 26706, 26727, 27235, 27244, 27245, 27509, 27756, 27759, 28406, 28436, 28456, 28476, 36147, 36221, 36222, 36223, 36224, 36225, 36226, 36252, 36253, 36254, 36598, 37182, 37183, 37184, 37187, 37188, 37211, 37212, 37213, 37214, 37217, 37220, 37221, 37222, 37223, 37224, 37225, 37226, 37227, 37228, 37229, 37230, 37231, 37232, 37234, 37235, 37236, 37238, 37241, 37242, 37243, 37244, 43260, 43261, 43262, 43263, 43264, 43265, 43275, 43276, 43277, 43278, 43752, 44500, 49440, 49441, 49442, 49446, 49450, 49451, 49452, 49460, 49465, 50382, 50384, 50385, 50386, 50387, 50389, 50590, 61623, 62263, 62264, 62280, 62281, 62282, 63610, 64610, 64620, 70010, 70015, 70170, 70332, 70370, 70371, 70373, 70390, 71023, 71034, 72240, 72255, 72265, 72270, 72275, 72285, 72291, 72295, 73040, 73085, 73115, 73525, 73580, 73615, 74190, 74210, 74220, 74230, 74235, 74240, 74241, 74245, 74246, 74247, 74249, 74250, 74251, 74260, 74270, 74280, 74283, 74290, 74291, 74300, 74305, 74320, 74327, 74328, 74329, 74330, 74340, 74355, 74360, 74363, 74425, 74430, 74440, 74445, 74450, 74455, 74470, 74475, 74480, 74485, 74740, 74742, 75600, 75605, 75625, 75630, 75658, 75705, 75710, 75716, 75726, 75731, 75733, 75736, 75741, 75743, 75746, 75756, 75791, 75801, 75803, 75805, 75807, 75809, 75810, 75825, 75827, 75831, 75833, 75840, 75842, 75860, 75870, 75872, 75880, 75885, 75887, 75889, 75891, 75893, 75894, 75896, 75898, 75901, 75902, 75952, 75953, 75954, 75956, 75957, 75958, 75959, 75962, 75966, 75970, 75978, 75980, 75982, 75984, 76000, 76001, 76080, 76120, 76496, 77001, 77002, 77003, 92611, 93565, 93566, 93567, 93568, G0106, G0120, G0278

**S.10. Denominator Exclusions** (Brief narrative description of exclusions from the target population)

No exclusions

**S.11. Denominator Exclusion Details** (All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

**S.12. Stratification Details/Variables** (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)

The measure is not stratified.

**S.13. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)

No risk adjustment or risk stratification



If other:

**S.14. Identify the statistical risk model method and variables** (*Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability*)

**S.15. Detailed risk model specifications** (*must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.*)

*Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.*

**S.15a. Detailed risk model specifications** (*if not provided in excel or csv file at S.2b*)

**S.16. Type of score:**

Rate/proportion

If other:

**S.17. Interpretation of Score** (*Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score*)

Better quality = Higher score

**S.18. Calculation Algorithm/Measure Logic** (*Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.*)

Calculation for Performance

For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator, Denominator.

Numerator (A) Includes:

Number of patients/reports meeting numerator criteria

Performance Denominator (PD) Includes:

Number of reports meeting criteria for denominator inclusion

To calculate performance rates:

1) Find the patients who meet the initial patient population (ie, the general group of patients that the performance measure is designed to address).

2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical.

3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator

4) If the measure does not have exceptions, STOP. If the measure does have exceptions, proceed with the following steps. From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for denominator exception, when exceptions have been specified. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. Although the exception cases are removed from the denominator population for the performance calculation, the number of patients with valid exceptions should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI.

If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.

**S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment** (*You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1*)

Available at measure-specific web page URL identified in S.1

**S.20. Sampling** (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF a PRO-PM, identify whether (and how) proxy responses are allowed.

The measure does not require sampling or a survey.

**S.21. Survey/Patient-reported data** (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

The measure does not require sampling or a survey.

**S.22. Missing data** (specify how missing data are handled, e.g., imputation, delete case.)

Required for Composites and PRO-PMs.

If data is missing, the measure is not calculated.

**S.23. Data Source** (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.24.

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Paper Medical Records

**S.24. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

Claims

**S.25. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

No data collection instrument provided

**S.26. Level of Analysis** (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Clinician : Group/Practice, Clinician : Individual

**S.27. Care Setting** (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility, Imaging Facility

If other:

**S.28. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

**2a. Reliability** – See attached Measure Testing Submission Form

**2b. Validity** – See attached Measure Testing Submission Form

MeasSubm\_MeasTesting\_0510\_01\_2014\_Final.docx

### 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

#### 3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

##### 3a.1. Data Elements Generated as Byproduct of Care Processes.

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score)

If other:



### 3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields?** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*)

ALL data elements are in defined fields in electronic claims

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.**

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.**

Attachment:

### 3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

**IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.**

The measure has been reported successfully in the PQRS program since 2009. In earlier years, the denominator included codes for procedures where fluoroscopy was only sometimes used. This posed a problem for how to report when fluoro was not used. Subsequently, specifications have been modified and updated annually only to include codes for procedures where fluoro is always used.

In certain practice arrangements radiologists only interpret (and submit claims for) images from procedures using fluoroscopy and are not present during the procedure, typically in a hospital. In some of these cases the exposure dose/time is not available at the time the radiologist is finalizing the interpretative report. This may encourage coordination with the hospital staff in order to report the information.

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** (*e.g., value/code set, risk model, programming code, algorithm*).

There are not fees directly associated with use of the measure.

## 4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

#### 4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Planned	Current Use (for current use provide URL)
	<p>Public Reporting PQRS <a href="http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/MeasuresCodes.html">http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/MeasuresCodes.html</a></p> <p>Professional Certification or Recognition Program American Board of Radiology <a href="http://www.theabr.org/moc-dr-pqi-projects">http://www.theabr.org/moc-dr-pqi-projects</a></p> <p>Quality Improvement with Benchmarking (external benchmarking to multiple organizations) Society of Interventional Radiology Image-Guided Intervention Registry <a href="http://www.hi-iq.com/capabilities/quality-assurance">http://www.hi-iq.com/capabilities/quality-assurance</a></p>

**4a.1. For each CURRENT use, checked above, provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included

Physician Quality Reporting System  
Public Reporting  
National

American Board of Radiology  
Maintenance of Certification Part IV  
National

Society of Interventional Radiology  
Quality Improvement  
National

**4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)**

**4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)**

**4b. Improvement**

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)**

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)
- Geographic area and number and percentage of accountable entities and patients included

This measure has been included in the Physician Quality Reporting System since 2009 as Measure #145.  
Shown below are national average performance rates as reported in the CMS Report: 2011 Reporting Experience Including Trends (2008-2012) Physician Quality Reporting System and Electronic Prescribing (eRx) Incentive Program, APPENDIX, Table A23. Reporting

and Performance Information by Individual Measure for the Physician Quality Reporting System (2008 to 2011).

Year	Performance Rate
------	------------------

2009	41.6%
------	-------

2010	48.1%
------	-------

2011	54.1%
------	-------

2012	67.1%
------	-------

The performance rate was calculated as the count of reported instances where performance was met (numerator) divided by the total number of reported instances that excluded reported exclusions (i.e., performance denominator).

(2012 rate was pulled from the CMS PY13 Prior Year Benchmark Report for the Value Modifier program, link:

<http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/PY2013-Prior-Year-Benchmarks-.pdf>

While these rates do show a steady increase in performance, the 2012 score still indicates that 32.9% of patients reported on did not receive optimal care. Additionally, the percentage of eligible professionals that could have reported the measure remains low; the performance rate is not known for those who did not report. Data below also from the CMS Report: 2011 Reporting Experience Including Trends (2008-2012) Physician Quality Reporting System and Electronic Prescribing (eRx) Incentive Program, APPENDIX, Table A22. Eligible Professional (EP) Eligibility and Participation Information by Individual Measure for the Physician Quality Reporting System (2008 to 2011).

Year	Reporting Rate
------	----------------

2009	6.1%
------	------

2010	8.7%
------	------

2011	12.3%
------	-------

Additionally, based on data from a Medicare PQRS measure report of claims data In 2011, 108,364 eligible professionals could have reported the measure of which only 12% did report. Over 95,000 eligible professional (EP) did not report on the measure. Assuming that those EPs who did not report the PQRS measure also did not record fluoroscopy dose/time in the report, then at a minimum, at least 95,000 patients who had a fluoroscopy procedure did not have radiation dose/time reported for them. In addition, of the patients of 1300 professionals (12.3%) who reported on the measure, nearly half the patients (performance rate = 54.1%) did not have radiation dose/time on their final report. This points to a persistent gap, and leaves room for additional improvement.

Viewed another way, using the same Medicare PQRS measure report, of the 5 million Medicare patients who had a fluoroscopic procedure, only 1 million had the measure reported for them, and only 556,000 had a radiation dose/time included in their report.

Exact numbers:

5165974 – eligible patients

1005416 - reported

556535 – measure met

**4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

#### 4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.**

There is no evidence of unintended consequences.

## 5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

#### 5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.  
[Yes](#)

##### 5.1a. List of related or competing measures (selected from NQF-endorsed measures)

[0739 : Radiation Dose of Computed Tomography \(CT\)](#)

[0740 : Participation in a Systematic National Dose Index Registry](#)

##### 5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

#### 5a. Harmonization

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

##### 5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications completely harmonized?

##### 5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

[These measures are similar in that the focus is collection and tracking of dose information, however the imaging modality is limited to computed tomography \(CT\).](#)

#### 5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

##### 5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

## Appendix

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

[No appendix Attachment:](#)

## Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** [American College of Radiology](#)

**Co.2 Point of Contact:** [Judy, Burleson, MHSA, \[jburleson@acr.org\]\(mailto:jburleson@acr.org\), 703-648-3787-](#)

**Co.3 Measure Developer if different from Measure Steward:** [American College of Radiology](#)

**Co.4 Point of Contact:** [Judy, Burleson, MHSA, \[jburleson@acr.org\]\(mailto:jburleson@acr.org\), 703-648-3787-](#)

## Additional Information

### Ad.1 Workgroup/Expert Panel involved in measure development

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

Workgroup co-chairs:

William Golden, MD (Co-Chair) (internal medicine)

David Seidenwurm, MD (Co-Chair) (diagnostic radiology)

Workgroup members:

Stephen Amis, MD (diagnostic radiology)

Mark D. Morasch, MD (vascular surgery)

Michael Bettmann, MD (diagnostic radiology)

Robert Pyatt, Jr, MD (diagnostic radiology)

Joseph P. Drozda, Jr, MD (cardiology)

Robert Rosenberg, MD (diagnostic radiology)

James H. Ellis, MD (diagnostic radiology)

John Schneider, MD, PhD (internal medicine)

George Fueredi, MD (interventional radiology)

Gary Schultz, DC, DACBR (chiropractic)

Bruce R. Greenspahn, MD, FACC (cardiology)

Carl L. Tommaso, MD, FSCAI (interventional cardiology)

Carol H. Lee, MD (diagnostic radiology)

Susan Nedza, MD, MBA, FACEP (CMS)

Sylvia Publ, MBA, RHIA (CMS)

Thomas C. Fenter, MD (Blue Cross Blue Shield Association)

Richard Leithiser, Jr, MD, MMM (Blue Cross Blue Shield Association)

Timothy Kresowik, MD (PCPI consultant)

Becky Kresowik (PCPI consultant)

American College of Radiology staff

AMA PCPI staff

NCQA staff

### Measure Developer/Steward Updates and Ongoing Maintenance

**Ad.2 Year the measure was first released:** 2007

**Ad.3 Month and Year of most recent revision:** 09, 2013

**Ad.4 What is your frequency for review/update of this measure?** Three year cycle

**Ad.5 When is the next scheduled review/update for this measure?** 08, 2012

**Ad.6 Copyright statement:** Physician Performance Measures (Measures) and related data specifications, developed by the American Medical Association (AMA) in collaboration with the Physician Consortium for Performance Improvement (the Consortium) and the National Committee for Quality Assurance (NCQA).

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**Ad.7 Disclaimers:** These performance Measures are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

**Ad.8 Additional Information/Comments:** This measure is currently undergoing maintenance/revision.

There was a request for an ad-hoc review of this measure. The basis for the request was that fluoroscopy exposure to patients can be better expressed in Dose Area Product (DAP). When possible the DAP should be calculated and reported instead of Fluoro Time.

The measure is currently undergoing revision. The revised draft emphasizes recording actual exposure vs time and identifies preferable means for quantifying dose, including DAP. Additionally, the title has been revised to indicate dose recording is part of the measure. The revised measure will be submitted to NQF for review following approval and testing, if appropriate.