



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 sub criterion 1b).

Brief Measure Information

NQF #: 0513

Corresponding Measures:

De.2. Measure Title: Thorax CT—Use of Contrast Material

Co.1.1. Measure Steward: Centers for Medicare & Medicaid Services

De.3. Brief Description of Measure: This measure calculates the percentage of thorax computed tomography (CT) studies that are performed without and with contrast, out of all thorax CT studies performed (those without contrast, those with contrast, and those with both) at each facility. The measure is calculated based on a one-year window of Medicare fee-for-service claims data. The measure has been publicly reported annually by the measure steward, the Centers for Medicare & Medicaid Services (CMS), since 2010, as a component of its Hospital Outpatient Quality Reporting (HOQR) Program.

1b.1. Developer Rationale: This measure will reduce overuse of combination scans of the thorax, as combination scans of the thorax can result in increased exposure to radiation with little clinical benefit. The measure score will guide patient selection of providers, assess quality, and inform quality improvement.

S.4. Numerator Statement: Of beneficiaries in the denominator, number of thorax studies without and with contrast (combined studies).

S.6. Denominator Statement: The number of thorax studies performed without contrast, with contrast, or both without and with contrast.

S.8. Denominator Exclusions: Indications for measure exclusion include any patients with diagnosis codes associated with:

- Crushing injury
- Internal injury of chest, abdomen, and pelvis
- Non-traumatic aortic disease

De.1. Measure Type: Process

S.17. Data Source: Claims

S.20. Level of Analysis: Facility, Other, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: Oct 28, 2008 **Most Recent Endorsement Date:** Aug 03, 2016

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? Not applicable; this measure is not a paired or group measure.

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 sub criteria to pass this criterion and be evaluated against the remaining criteria.**

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

NQF_0513_Measure_Evidence_Form_2016-02-01.docx

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

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., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

This measure will reduce overuse of combination scans of the thorax, as combination scans of the thorax can result in increased exposure to radiation with little clinical benefit. The measure score will guide patient selection of providers, assess quality, and inform quality improvement.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. 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 include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Analysis of Medicare fee-for-service (FFS) claims data indicates variation in the use of combined CT thorax studies. For the 2015 public reporting period, performance rates ranged from 0.0% to 46.5%, with a mean of 3.3%.

The data presented below represent information for the 2,413 facilities whose denominator counts met minimum case count requirements for all years included in the table.

Further details on the descriptive statistics for longitudinal facility performance are included below:

Public Reporting Year	2010	2011	2012	2013	2014	2015
Measurement Period	January 2008 – December 2008			January 2009 – December 2009		January 2010 – December 2010
	January 2011 – December 2011		July 2012 – June 2013		July 2013 – June 2014	
Facilities	2,413	2,413	2,413	2,413	2,413	2,413
Minimum Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1st Percentile	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5th Percentile	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10th Percentile	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
25th Percentile	0.5%	0.4%	0.5%	0.3%	0.2%	0.1%
Median	1.9%	1.7%	1.8%	1.5%	1.2%	1.0%
75th Percentile	6.5%	5.8%	6.4%	5.1%	4.1%	3.5%
90th Percentile	18.3%	16.3%	18.7%	13.8%	9.7%	9.5%
95th Percentile	33.9%	27.7%	32.5%	22.6%	16.7%	15.1%
99th Percentile	69.8%	55.3%	66.0%	41.7%	34.9%	30.1%
Maximum Value	89.3%	90.6%	90.5%	81.3%	64.3%	46.5%
Mean Performance (Standard Deviation)	6.9% (13.1)		5.7% (10.5)		6.7% (12.5)	4.8% (8.4)
	3.3% (5.8)				3.7% (6.7)	

One of the intentions for reporting this measure is to identify facilities with significant outlying performance. As shown in the table above, many facilities cluster around a value of 0 to 2 percent; however, outlying performance persists, indicating there are facilities for which there is a notable rate of overuse.

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.

Data have been included in Section 1b.2; these data represent national performance over time, from 2010 to 2015.

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 maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., “topped out”, disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Using 2013 performance data (January 2013 – December 2013), we evaluated the effect of patient and facility characteristics on the likelihood of each beneficiary having a combined CT thorax study. Using a logistic regression model, we assessed the impact of patient and facility characteristics for the 1,667,550 CT thorax studies performed in 2013 and found that patient race/ethnicity, patient gender, patient age, and facility characteristics had a significant relationship with the rate of inappropriate combined CT thorax studies.

The regression model indicates that patient race/ethnicity has a statistically significant effect on the likelihood that a patient received an inappropriate combined CT thorax study. African Americans were more likely to undergo inappropriate imaging compared to White beneficiaries (OR 1.234, $p=0.000$). Similarly, Latinos were more likely to undergo inappropriate imaging compared to White beneficiaries (OR 1.663, $p=0.000$). The effect was different for Asians, who were less likely to undergo inappropriate imaging compared to White beneficiaries (OR=0.862, $p=0.003$).

The regression model also indicates that patient gender is a significant factor. Women were less likely to undergo inappropriate imaging compared to men (OR 0.960, $p=0.000$).

Patient age also had a statistically significant effect within the regression model. Compared to beneficiaries aged 60 to 69, beneficiaries aged 18 to 29 (OR 0.610, $p=0.000$), 30 to 39 (OR 0.741, $p=0.000$), 70 to 79 (OR 0.943, $p=0.000$), 80 to 89 (OR 0.848, $p=0.000$), and 90+ (OR 0.719, $p=0.000$) were statistically less likely to receive an inappropriate combined CT thorax study. Conversely, patients aged 50 to 59 were more likely to receive an inappropriate combined CT thorax study (OR 1.087, $p=0.000$) when compared to beneficiaries aged 60 to 69. There was no statistical difference in the likelihood that a patient received an inappropriate combined CT thorax study for patients aged 40 to 49 compared to beneficiaries aged 60 to 69.

Facility characteristics also played a role in determining whether a patient received an inappropriate combined CT thorax study. When compared to facilities with fewer than 50 beds (a proxy for facility size), facilities with 51 – 100 beds (OR 0.889, $p=0.000$), 101 – 250 beds (OR 0.805, $p=0.000$), 251 – 500 beds (OR 0.780, $p=0.000$), and 500+ beds (OR 0.528, $p=0.000$) were less likely to perform inappropriate combined CT thorax studies. Similarly, a facility’s urbanicity impacted a beneficiary’s likelihood of having an inappropriate combined CT thorax study – urban facilities were less likely than rural facilities to perform inappropriate combined CT thorax studies (OR 0.576, $p=0.000$). Finally, teaching (OR 0.732, $p=0.000$) and major-teaching (OR 0.578, $p=0.000$) facilities were less likely to perform inappropriate combined CT thorax studies compared to non-teaching facilities.

While the regression model identified subpopulations of patients and facilities for which there are statistically significant differences in the rate of inappropriate combined CT thorax studies, these disparities do not indicate a need for adjustment of the measure specifications. Adjusting for these differences would mask underlying differences in quality of care. As this is a process measure, there should be no difference in the standard of care for these patients; we believe these statistically significant differences are driven by variation in provider practice. Consequently, we do not believe risk adjustment or stratification is necessary or appropriate for this measure.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

Limited information exists within the literature related to disparities in care for patients undergoing concurrent thorax CT studies. Mathias et al. (2012) used data from the HOQR Program to assess consistency in performance across measures, focusing on whether higher imaging use could be associated with certain hospital characteristics. To do so, the study team examined associations between hospital characteristics and higher use of imaging, drawing on 2008 HOQR data linked with data from the 2009 American Hospital Association survey. Mathias and his team found that use of imaging varied widely and was weakly correlated across most

measures. Of note, hospitals with low volume (<25th percentile) were more likely to report higher imaging use than were hospitals of medium volume (25th to 75th percentile). Of particular interest, rural hospitals were more likely to report highest-decile use on combined thorax CT, in addition to several other measures. For-profit hospitals were also more likely to report highest-decile use on thorax CT measures. The study authors concluded that there are significant variations in use of imaging, with some hospitals reporting exceptionally high use.

Despite evidence identified in the literature indicating disparities in care for certain facility types, these disparities do not indicate a need for adjustment of the measure specifications. Adjusting for these differences would mask underlying differences in quality of care. As this is a process measure, there should be no difference in the standard of care for these patients; we believe these statistically significant differences are driven by variation in provider performance. Consequently, we do not believe risk adjustment or stratification is necessary or appropriate for this measure.

REFERENCES

1.) Mathias JS, Feinglass J, Baker DW. Variations in US hospital performance on imaging-use measures. *Med Care*. 2012;50(9):808-14.

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 sub criteria 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, Cardiovascular : Congestive Heart Failure, Critical Care, Respiratory, Respiratory : Asthma, Respiratory : Chronic Obstructive Pulmonary Disease (COPD), Respiratory : Dyspnea, Respiratory : Pneumonia

De.6. Non-Condition Specific(check all the areas that apply):

Safety, Safety : Overuse

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Elderly

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.)

<https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228695266120>

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)

This is not an eMeasure **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)

Attachment Attachment: [NQF_0513_MeasureCodeSets_2018-12-05.xlsx](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment:

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Not an instrument-based measure

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

Yes

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

No substantive changes were made to the NQF 0513 measure specifications in 2018.

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) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Of beneficiaries in the denominator, number of thorax studies without and with contrast (combined studies).

S.5. 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, time period for data collection, 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 (S.14).

The numerator is defined by the following imaging procedure:

- Thorax CT without then with contrast

(Refer to Measure Code Set Excel workbook, included in S.2b, for detailed information on the codes used to identify the NQF 0513 numerator population.)

S.6. Denominator Statement (Brief, narrative description of the target population being measured)

The number of thorax studies performed without contrast, with contrast, or both without and with contrast.

S.7. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, 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 target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The denominator is defined by the following imaging procedures:

- Thorax CT without contrast

- Thorax CT with contrast

- Thorax CT without then with contrast

(Refer to Measure Code Set Excel workbook, included in S.2b, for detailed information on the codes used to identify the NQF 0513 denominator population.)

Global and technical component (TC) claims should be considered in order to capture all outpatient volume facility claims, typically paid under the Outpatient Prospective Payment System (OPPS)/Ambulatory Payment Classifications (APC) methodology, and to avoid double counting of professional component (PC) claims (i.e., 26 modifier).

A technical unit can be identified by a modifier code of TC. A global unit can be identified by the absence of a TC or 26 modifier code.

Thorax CT studies can be billed separately for the technical and professional components, or billed globally, which includes both the professional and TCs.

PC claims will outnumber TC claims due to over-reads.

S.8. Denominator Exclusions (Brief narrative description of exclusions from the target population)

Indications for measure exclusion include any patients with diagnosis codes associated with:

- Crushing injury
- Internal injury of chest, abdomen, and pelvis
- Non-traumatic aortic disease

S.9. Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, 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.)

Indications for measure exclusion include any patients with the following diagnosis codes:

- Internal Injury of Chest, Abdomen, and Pelvis
- Crushing injury
- Non-traumatic aortic disease

(Refer to Measure Code Set Excel workbook, included in S.2b, for detailed information on the codes used to identify the NQF 0513 measure exclusions.)

S.10. Stratification Information (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – 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.)

Not applicable; this measure does not stratify its results.

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

No risk adjustment or risk stratification

If other:

S.12. Type of score:

Other (specify):

If other: Percentage

S.13. 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 = Lower score

S.14. Calculation Algorithm/Measure Logic (Diagram or 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; time period for data, aggregating data; risk adjustment; etc.)

This measure calculates the percentage of thorax studies that are performed without and with contrast, out of all thorax studies performed (those without contrast, those with contrast, and those with both). The measure is calculated based on a one-year window of hospital outpatient claims data, as follows:

1. Select hospital outpatient claims with a Current Procedural Terminology (CPT®) code for a thorax CT study on a revenue line item
2. Exclude professional component only claims with modifier = '26'
3. Exclude cases with one or more exclusion diagnoses included on claim (i.e., internal injury of chest, abdomen, and pelvis; crushing injury; or, non-traumatic aortic disease)
4. This is your denominator. Set denominator counter = 1
5. Set numerator counter = 1 if CPT® code = 71270—Thorax CT Studies without and with Contrast (combined studies)
6. Aggregate denominator and numerator counts by Medicare provider number
7. Measure = numerator counts/denominator counts [The value should be recorded as a percentage]

S.15. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

If an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

This measure relies exclusively on 100% Medicare FFS standard analytical file (SAF) data; no sampling of beneficiaries was

performed.

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

This measure does not use survey data.

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Claims

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

If instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

This measure was initially constructed using the 100 percent Medicare FFS outpatient SAFs from 2007. These outpatient SAFs contain the claims data on imaging utilization and performed in hospital outpatient departments (including emergency department services), which are necessary to attribute the measure to specific facilities. Public reporting of the measure currently uses the 100 percent Medicare FFS outpatients SAFs from 2013 and 2014.

S.19. 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.20. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility, Other, Population : Regional and State

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Outpatient Services

If other:

S.22. 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.)

Not applicable; this is not a composite measure.

2. Validity – See attached Measure Testing Submission Form

NQF_0513_Measure_Testing_Form_2016-02-09_Crosswalk.docx, NQF_0513_Measure_Testing_Form_2016-02-09_Clean.docx

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1, 2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

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.

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

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) Update this field for **maintenance of endorsement**.

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. For **maintenance of endorsement,** if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

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. Please also complete and attach the NQF Feasibility Score Card.

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. Required for maintenance of endorsement. Describe difficulties (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 instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

This measure is claims based and uses CMS hospital outpatient claims as its data source.

Special attention needs to be taken when counting procedures on the Medicare claims files. The biggest issue is how to deal with modifier codes. Modifiers are two digit indicators (alpha or numeric) that represent a service or procedure that has been altered by some specific circumstance, which typically will impact the payment amount.

Procedure modifier code “26” represents the professional component of a procedure and includes the clinician work (i.e., the reading of the image by a physician), associated overhead and professional liability insurance costs. This modifier corresponds to the human involvement in a given service or procedure.

The procedure modifier code “TC” represents the technical component of a service or procedure and includes the cost of equipment and supplies to perform that service or procedure. This modifier corresponds to the equipment/facility part of a given service or

procedure.

In most cases, unmodified codes represent a global procedure, which includes both the professional and technical components. There are also other modifier codes. All other modifier codes have been counted as a technical code for our purposes. When calculating the measures, we are only concerned with procedures associated with technical and global modifiers, as these modifiers refer to services provided by the facility. This reduces the possibility of double-counting procedures, since a single procedure may result in both a technical and professional record on the claims files. There were very few instances when this occurred as it is related to procedures applicable to the measure.

When developing counts of procedures, the objective is to avoid double-counting procedures that may have been billed through multiple revenue centers within a facility. Billing through multiple centers leads to multiple records in the Medicare claims files (i.e., the SAFs). For instance, there may be multiple bills for a single contrast CT study. On one bill, the charges relate to the application of a radiopharmaceutical, which could have a technical modifier code and come from the pharmacy revenue center. On the other bill, the charges relate to the imaging study and may fall under a technical bill from the imaging center revenue center. In this case, we only count the contrast CT once, since only one contrast CT study was performed. However, if we were summing up the Medicare paid amounts for this procedure, we would include the Medicare paid amounts from both bills, as they each represent payments for services directly related to the particular contrast CT procedure.

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).

No fees, licensure, or other requirements are necessary to use this measure; however, CPT codes, descriptions, and other data are copyright 2013 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association. Applicable FARS\DFARS Restrictions Apply to Government Use. Fee schedules, relative value units, conversion factors, and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

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.

Specific Plan for Use	Current Use (for current use provide URL)
	Public Reporting Hospital Outpatient Quality Reporting http://www.medicare.gov/hospitalcompare/search.html Hospital Outpatient Quality Reporting https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228695266120

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

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

- Level of measurement and setting

Public Reporting:

Name of program and sponsor: The CMS Hospital Outpatient Quality Reporting (HOQR) Program

Purpose: The HOQR Program is a pay for quality data reporting program implemented by CMS for outpatient hospital services. In addition to providing hospitals with a financial incentive to report their quality of care measure data, the HOQR Program provides CMS with data to help Medicare beneficiaries make more informed decisions about their health care. Hospital quality of care information gathered through the HOQR Program is publicly available on the Hospital Compare website.

Accountable entities and patients: The publicly reported values (on Hospital Compare) are calculated for all facilities in the United States that meet minimum case count requirements. For the period of 2010 to 2015, 2,413 facilities met the minimum case count each year. Additional facilities met the minimum case count requirements in some, but not all, years. The claims included in the publicly reported calculations are for Medicare FFS patients whose claims are subject to the Outpatient Prospective Payment System (OPPS).

Quality Improvement with Benchmarking (external benchmarking to multiple organizations):

Name of program and sponsor: The CMS HOQR Program

Purpose: The HOQR Program is a pay for quality data reporting program implemented by CMS for outpatient hospital services. In addition to providing hospitals with a financial incentive to report their quality of care measure data, the data is publicly reported on the Hospital Compare website. The data reported on Hospital Compare not only shows the hospital's score on the measure, but also provides state and national averages for the measure. This enables consumers to compare the hospital's performance to other facilities and determine if the facility is performing well or not; providing the consumer with comparative information will help them decide where to seek care.

Accountable entities and patients: The publicly reported values (on Hospital Compare) are calculated for all facilities in the United States that meet minimum case count requirements. For the period of 2010 to 2015, 2,413 facilities met the minimum case count each year. Additional facilities met the minimum case count requirements in some, but not all, years. The claims included in the publicly reported calculations are for Medicare FFS patients whose claims are subject to the OPPS.

4a1.2. 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?)

This measure is publicly reported.

4a1.3. 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.)

This measure is publicly reported.

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

Data for NQF 0513 are publicly available on CMS's Hospital Compare website, which are refreshed annually in July. During the preview period in advance of each year's refresh, CMS distributes preview reports and facility-specific reports (FSRs). The preview report contains a summary of the facility's score on a number of metrics, including NQF 0513; the FSR contains claims-level detail for all cases included in the calculation of NQF 0513. All facilities eligible to report NQF 0513 receive a preview report and FSR each year.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

CMS provides facilities with claims-level information for NQF 0513 annual through an FSR. Each site's FSR contains all claims included and excluded from calculation. An FSR User Guide is available on CMS's QualityNet website, which guides stakeholders through how to interpret the data contained in their FSR.

Stakeholders can connect with CMS's contractors for NQF 0513 through the QualityNet Q&A tool, through which they can submit questions about the specifications for NQF 0513 and on the data contained in the preview report/FSR.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

CMS has not performed a synthesis of all feedback received for NQF 0513 since the last annual update. This information will be made available when NQF 0513 is reviewed for endorsement maintenance in spring 2020.

4a2.2.2. Summarize the feedback obtained from those being measured.

CMS has not performed a synthesis of all feedback received for NQF 0513 since the last annual update. This information will be made available when NQF 0513 is reviewed for endorsement maintenance in spring 2020.

4a2.2.3. Summarize the feedback obtained from other users

CMS has not performed a synthesis of all feedback received for NQF 0513 since the last annual update. This information will be made available when NQF 0513 is reviewed for endorsement maintenance in spring 2020.

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

CMS's contractors use feedback received from stakeholders (on their FSRs and through the QualityNet Q&A tool) to revise the specifications for NQF 0513. Following receipt of a suggestion to adjust the specifications for NQF 0513, CMS's contractors perform a review of the literature to determine if the proposed change aligns with the empirical evidence base for the measure; qualitative feedback from the technical expert panel and quantitative analyses using claims data are performed to evaluate the impact a change would have on the specifications and nationally reported results.

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.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (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.)

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.

Not applicable as there is demonstrated improvement in measure performance.

4b2. 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).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

We did not identify any unintended consequences during measure testing. Similarly, no evidence of unintended consequences to individuals or populations have been reported since implementation. We will continue to monitor the potential for unintended consequences through an annual review of the literature as well as an ongoing review of stakeholder comments and inquiries.

4b2.2. Please explain any unexpected benefits from implementation of this measure.

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.

No

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

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

5a. Harmonization of Related Measures

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 harmonized to the extent possible?

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

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.)

Not applicable

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.

Attachment:

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): [Centers for Medicare & Medicaid Services](#)

Co.2 Point of Contact: [Vinita, Meyyur, Vinita.Meyyur@cms.hhs.gov, 410-786-7224-](#)

Co.3 Measure Developer if different from Measure Steward: [The Lewin Group](#)

Co.4 Point of Contact: [Colleen, McKiernan, Colleen.McKiernan@lewin.com, 703-269-5595-](#)

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.

The contractor has convened a TEP, which will evaluate and provide feedback on measure-development and maintenance efforts for the imaging efficiency measures. Specifically, the TEP will provide direction and feedback through all phases of project activities, including expansion of imaging efficiency measures to additional CMS quality reporting programs, updates to the current specifications of the seven imaging efficiency measures, review of quantitative testing results, feedback on qualitative testing questions (i.e., results of TEP member questionnaires), and support for endorsement of the measures by the National Quality Forum (NQF).

The following is a list of the contractor's TEP members:

Meenu Arora, MBA
Quality Improvement Leader , Sequoia Hospital

Brian Baker
Chief Executive Officer, Carealytics

Peter Benner
Vice Chair, MNSure

Martha Deed, Ph.D
Safe Patient Project's Patient Advocacy Network

Lawrence Feinberg, MD
Attending Physician, University of Colorado Hospital

Elliott Fishman, MD
Professor of Radiology and Oncology, Johns Hopkins School of Medicine

Marian Hollingsworth
Patient Advocate

Michael Hutchinson, MD, Ph.D
Clinical Associate Professor of Neurology, Icahn School of Medicine at Mount Sinai

Gregory M. Kusiak, MBA, FRBMA
President, California Medical Business Services, Inc.

Barbara Landreth, RN, MBA
Clinical Information Analyst , St. Louis Area Business Health Coalition

Barbara McNeil, MD, Ph.D
Head Professor of Radiology, Harvard University

Michael J. Pentecost, MD
Chief Medical Officer, NIA Magellan

David Seidenwurm, MD
Medical Staff Consultant, Sutter Medical Group

Adam Sharp, MD, MS
Research Scientist , Kaiser Permanente Southern California

Paul R. Sierzenski, MD, RDMS, FACEP, FAAEM
Medical Director, Christian Health Care System

C. Todd Staub, MD, FACP

Chairman, ProHealth Physicians
Measure Developer/Steward Updates and Ongoing Maintenance Ad.2 Year the measure was first released: 2009 Ad.3 Month and Year of most recent revision: 03, 2015 Ad.4 What is your frequency for review/update of this measure? Annually Ad.5 When is the next scheduled review/update for this measure? 03, 2016
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Ad.8 Additional Information/Comments: