



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 #: 2411

De.2. Measure Title: Percutaneous Coronary Intervention (PCI): Comprehensive Documentation of Indications for PCI

Co.1.1. Measure Steward: American College of Cardiology

De.3. Brief Description of Measure: Percentage of patients, aged 18 years and older, for whom percutaneous coronary intervention (PCI) is performed with comprehensive documentation for the procedure that includes, at a minimum, the following elements: priority (acute coronary syndrome, urgent, elective, emergency/salvage); presence and severity of angina symptoms; use of antianginal medical therapies within two weeks prior to the procedure, if any; presence, results, and timing of non-invasive stress test, fractional flow reserve (FFR), or intravascular ultrasound (IVUS), if performed; and significance of angiographic stenosis (may be quantitative or qualitative) on coronary angiography for treated lesion.

1b.1. Developer Rationale: The presence or absence of clinical indications for coronary revascularization contributes to clinical decision-making regarding the need and appropriateness of PCI. Accurate documentation of clinical indications is imperative for determining appropriateness of PCI. This measure was developed to help ensure high quality care and a critical evaluation of the use of a major treatment in routine clinical practice. Inappropriate PCI may be harmful to patients and generate unwarranted costs to the healthcare system, whereas appropriate revascularization procedures can improve patients' clinical outcomes.(1)

(1) Patel MR, Dehmer GJ, Hirshfeld JW, Smith PK, Spertus JA. ACCF/SCAI/STS/AATS/AHA/ASNC/HFSA/SCCT2012 appropriate use criteria for coronary revascularization focused update: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, American Society of Nuclear Cardiology, and the Society of Cardiovascular Computed Tomography. J Am Coll Cardiol 2012;59:857–81.

S.4. Numerator Statement: Patients with comprehensive documentation for the procedure that includes, at a minimum, the following elements:

- Priority: acute coronary syndrome, urgent, elective, emergency/salvage
- Presence and severity of angina symptoms [eg, Canadian Cardiovascular Society Classification (CCS) system]
- Use of antianginal medical therapies within two weeks prior to the procedure, if any
- Presence, results, and timing of non-invasive stress test FFR or IVUS, if performed
- Significance of angiographic stenosis (may be quantitative or qualitative) on coronary angiography for treated lesion

S.7. Denominator Statement: All patients aged 18 years and older for whom PCI is performed

S.10. Denominator Exclusions: None

De.1. Measure Type: Process

S.23. Data Source: Electronic Clinical Data : Registry

S.26. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Sep 08, 2014 **Most Recent Endorsement Date:** Sep 08, 2014

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

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

[NQF_measure_2411_Evidence_attachment2-635234010328636792.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)

The presence or absence of clinical indications for coronary revascularization contributes to clinical decision-making regarding the need and appropriateness of PCI. Accurate documentation of clinical indications is imperative for determining appropriateness of PCI. This measure was developed to help ensure high quality care and a critical evaluation of the use of a major treatment in routine clinical practice. Inappropriate PCI may be harmful to patients and generate unwarranted costs to the healthcare system, whereas appropriate revascularization procedures can improve patients' clinical outcomes.(1)

(1) Patel MR, Dehmer GJ, Hirshfeld JW, Smith PK, Spertus JA. ACCF/SCAI/STS/AATS/AHA/ASNC/HFSA/SCCT2012 appropriate use criteria for coronary revascularization focused update: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, American Society of Nuclear Cardiology, and the Society of Cardiovascular Computed Tomography. J Am Coll Cardiol 2012;59:857–81.

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.

The primary analysis included elective PCI's in the CathPCI Registry from 1/1/2012 thru 12/31/2012. Additionally we used data from 1/1/2011 thru 12/31/2011 for temporal comparisons.

Note: "Not Mappable to AUC" in the tables below= No comprehensive documentation of indication for PCI (did not meet measure)

CathPCI Registry data

Time	Total PCI	Not mappable to AUC
2011Q1	n = 43373	18796 (43.3%)
2011Q2	n = 44195	18378 (41.6%)
2011Q3	n = 37611	15097 (40.1%)
2011Q4	n = 35008	13628 (38.9%)
2012Q1	n = 36885	14058 (38.1%)
2012Q2	n = 35087	12957 (36.9%)
2012Q3	n = 32643	11509 (35.3%)
2012Q4	n = 30683	10539 (34.3%)
Total	n = 295485	114962 (38.9%)

Descriptive Statistics in 2011 and 2012 at Site Level (Sites with 10 or more elective procedures)

	2011	2012
Number of Sites	1146	1178

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Dec 11, 2015

Mean	0.4162694	0.3685528
Minimum	0	0
Lower Quartile	0.2800000	0.2380952
Median	0.3953488	0.3465463
Upper Quartile	0.5403587	0.4842767
Maximum	1.0000000	0.9444444
Quartile Range	0.2603587	0.2461815

By Decile

	2011	2012
10th Percentile	0.19008	0.15152
20th Percentile	0.25	0.21739
30th Percentile	0.30827	0.26154
40th Percentile	0.35	0.30556
50th Percentile	0.39535	0.34655
60th Percentile	0.45215	0.39130
70th Percentile	0.50127	0.45
80th Percentile	0.58416	0.52381
90th Percentile	0.6875	0.62931

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.

Additional evidence suggests an opportunity for improvement in the comprehensive documentation of clinical indications for PCI. One study analyzed data from the National Cardiovascular Data Registry (NCDR) CathPCI Registry to evaluate the appropriateness of PCIs submitted to the NCDR between July 1, 2009, and September 30, 2010. Of the 602,781 PCIs analyzed, 102,627 or 17% were excluded primarily because of the absence of all of the requisite data to determine appropriateness of the procedure.(1)

The Clinical Outcomes Assessment Program (COAP) in Washington State analyzed data submitted by 28 hospitals statewide to evaluate the appropriateness of PCIs performed between 2010 and 2012. COAP compared the proportion of PCI with insufficient data for PCI appropriateness classification in 2010 and 2011. Overall, there were few hospitals demonstrating an improvement in PCI with adequate documentation to ascertain PCI appropriateness.(2) (see COAP Appropriateness of PCI in Washington State results in Appendix A.1).

(1) Chan PS, Patel MR, Klein LW, et al. Appropriateness of percutaneous coronary intervention.JAMA. 2011;306(1):53-61.

(2) Bradley SM, Maynard C, Bryson CL. Clinical Outcomes Assessment Program 17th Annual Statewide Meeting, Interventional Cardiology Breakout Session, Seattle, WA. "Appropriateness of PCI in Washington State: Update." June 7, 2013.

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.

Disparities by Gender

2011	Total	Male	Female
	n = 160187	n = 111382	n = 48805
Not mappable	65899 (41.14%)	46736 (41.96%)	19163 (39.26%)
2012	n = 135298	n = 94735	n = 4056
	49063 (36.26%)	34906 (36.85%)	14157 (34.90%)

Disparities by Race

2011	Total	Caucasian	African Am	Other
	n = 160187	n = 140998	n = 12541	n = 6648

Not mappable 65899 (41.14%) 58276 (41.33%) 4965 (39.59%) 2658 (39.98%)

2012 n = 135298 n = 118007 n = 10421 n = 6870

Not Mappable 49063 (36.26%) 43141 (36.56%) 3652 (35.04%) 2270 (33.04%)

For Additional and detailed disparities data see Appendix A.1.

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.

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

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.

In 2010, an estimated 492,000 patients underwent PCI procedures in the United States.(1)

In 2011, PCI resulted in:

- 3.2 day length of stay (mean)
- More than \$72,000 in hospital charges (mean)
- 1.2% mortality rate(2)

Estimates suggest each PCI costs over \$12,000 but vary based on the patient and clinical context. In the SYNTAX trial, follow-up costs over 1 year brought the total costs of PCI to \$35,991 in patients with multivessel CAD.(3)

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

(1) Go AS, Mozaffarian D, Roger VL, et al. on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. *Circulation*. 2013;127:e6-e245.

(2) Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project. HCUPnet. <http://www.hcup.ahrq.gov/HCUPnet.jsp>. Accessed December 9, 2013.

(3) Cohen DJ, Lavelle TA, Serruys PW, et al, on behalf of the SYNTAX Investigators. Health related quality of life and U.S. economic outcomes of PCI with drug-eluting stents vs. bypass surgery: 1-year results from the SYNTAX trial. Presented at the American College of Cardiology meeting, March 29-31, 2009, Orlando, Florida.

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.)

Not applicable

2. Reliability and Validity—Scientific Acceptability of Measure Properties

<p>Extent to which the measure, <u>as specified</u>, 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.</p>
<p>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).</p>
<p>De.5. Subject/Topic Area (check all the areas that apply): Cardiovascular, Cardiovascular : Percutaneous Coronary Intervention (PCI)</p> <p>De.6. Cross Cutting Areas (check all the areas that apply):</p>
<p>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.) The specifications for this measure are available in attached Appendix A.1. Additional measure information can be found at http://www.ama-assn.org/apps/listserv/x-check/qmeasure.cgi?submit=PCPI.</p> <p>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:</p> <p>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:</p> <p>S.3. For endorsement maintenance, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons. Not applicable; new measure submission.</p>
<p>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. Patients with comprehensive documentation for the procedure that includes, at a minimum, the following elements: <ul style="list-style-type: none"> - Priority: acute coronary syndrome, urgent, elective, emergency/salvage - Presence and severity of angina symptoms [eg, Canadian Cardiovascular Society Classification (CCS) system] - Use of antianginal medical therapies within two weeks prior to the procedure, if any - Presence, results, and timing of non-invasive stress test FFR or IVUS, if performed - Significance of angiographic stenosis (may be quantitative or qualitative) on coronary angiography for treated lesion </p> <p>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.) Measurement period may vary by implementation program</p> <p>For the CathPCI registry the following measurement periods apply:</p> <p>Denominator: during the 3 month (quarterly) measurement period Numerator: Once for each surgical procedure performed during the measurement period [evaluate every surgical procedure during quarter – evaluate each patient record for the required pre-operative documentation]</p> <p>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</p>

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.

For patients for whom more than one PCI procedure is performed, the most recent PCI procedure will be counted. See Appendix A.1 for data dictionary, data collection form and measure calculation for registry reporting specifications.

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

All patients aged 18 years and older for whom PCI is performed

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

Senior Care

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)

For patients for whom more than one PCI procedure is performed, the most recent PCI procedure will be counted.

Denominator coding:

CPT Codes:

92920 Percutaneous transluminal coronary angioplasty; single major coronary artery or branch

92924 Percutaneous transluminal coronary atherectomy, with coronary angioplasty when performed; single major coronary artery or branch

92928 Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch

92933 Percutaneous transluminal coronary atherectomy, with intracoronary stent, with coronary angioplasty when performed; single major coronary artery or branch

92937 Percutaneous transluminal revascularization of or through coronary artery bypass graft (internal mammary, free arterial, venous), any combination of intracoronary stent, atherectomy and angioplasty, including distal protection when performed; single vessel

92941 Percutaneous transluminal revascularization of acute total/subtotal occlusion during acute myocardial infarction, coronary artery or coronary artery bypass graft, any combination of intracoronary stent, atherectomy and angioplasty, including aspiration thrombectomy when performed, single vessel

92943 Percutaneous transluminal revascularization of chronic total occlusion, coronary artery, coronary artery branch, or coronary artery bypass graft, any combination of intracoronary stent, atherectomy and angioplasty; single vessel

SNOMED-CT Codes:

11101003 Percutaneous transluminal coronary angioplasty

15256002 Transmyocardial revascularization by laser technique

175066001 Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery

232727003 Percutaneous directional coronary atherectomy

232728008 Percutaneous low speed rotational coronary atherectomy

232729000 Percutaneous high speed rotational coronary atherectomy

397193006 Percutaneous transluminal coronary angioplasty by rotoablation

397431004 Percutaneous transluminal coronary angioplasty with rotoablation, single vessel

414089002 Emergency percutaneous coronary intervention

415070008 Percutaneous coronary intervention

428488008 Placement of stent in anterior descending branch of left coronary artery

429499003 Placement of stent in circumflex branch of left coronary artery

429639007 Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery

431759005 Percutaneous transluminal atherectomy using fluoroscopic guidance

75761004 Infusion of intra-arterial thrombolytic agent with percutaneous transluminal coronary angioplasty

80762004 Infusion of intra-arterial thrombolytic agent with percutaneous transluminal coronary angioplasty, multiple vessels

85053006 Percutaneous transluminal coronary angioplasty, multiple vessels

91338001 Infusion of intra-arterial thrombolytic agent with percutaneous transluminal coronary angioplasty, single vessel

See Appendix A.1 for data dictionary, data collection form and measure calculation for registry reporting specifications.

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

None

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)

Not applicable

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)

We encourage the results of this measure be stratified by race, ethnicity, administrative sex, and payer, consistent with the data elements collected by the National Cardiovascular Data Registry (NCDR®) CathPCI Registry®.

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)

Not applicable

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)

Not Applicable

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.)

To calculate performance rates:

- 1) Find the patients who meet the initial patient population (ie, the general group of patients that a set of performance measures 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

If the patient does not meet the numerator, 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 in attached appendix at A.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.

Not applicable

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.

Not applicable

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

Required for Composites and PRO-PMs.

If data required to determine if an individual patient should be included in a specific performance measure based on defined criteria is missing, those cases would ineligible for inclusion in the denominator and therefore the case would be deleted.

If data required to determine if a denominator eligible patient qualifies for the numerator (or has a valid exclusion/exception) is missing, this case would represent a quality failure.

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

If other, please describe in S.24.

Electronic Clinical Data : Registry

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.

Data are collected via the National Cardiovascular Data Registry (NCDR®) CathPCI Registry®. CathPCI Registry data collection form is included in Appendix A.1.

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)

Available in attached appendix at A.1

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

Facility

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

Hospital/Acute Care 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.)

Not applicable

2a. Reliability – See attached Measure Testing Submission Form

2b. Validity – See attached Measure Testing Submission Form

2411_PCI_Comprehensive_Documentation_of_Indications_for_PCI_Measure_Testing_Form_122313_FINAL.pdf

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.

Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

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 a combination of electronic sources

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.

We have not identified any areas of concern or made any modifications as a result of testing and operational use of the measure in relation to data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, and other feasibility issues unless otherwise noted.

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*).

Limited proprietary coding is contained in the Measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets.

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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)
	Quality Improvement with Benchmarking (external benchmarking to multiple organizations) National Cardiovascular Data Registry (NCDR®) CathPCI Registry https://www.ncdr.com/webncdr/cathpci/

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

National Cardiovascular Data Registry (NCDR®) CathPCI Registry:

The CathPCI Registry is sponsored by ACCF in conjunction with the Society for Cardiovascular Angiography and Interventions.

The CathPCI Registry was designed to create a national surveillance system to assess the characteristics, treatments, and outcomes of patients with coronary heart disease who undergo procedures in cardiac catheterization laboratories. Participation in the CathPCI Registry provides risk-adjusted, quarterly benchmark reports that compare an institution's performance with that of volume-based peer groups and the national experience. The registry includes standardized, evidence-based data elements and definitions, a Dashboard tool that provides a custom query to control for variables (facility size, number of procedures, teaching vs. non-teaching sites, states and regions) to compare the participating facility data, metrics and volumes. ABIM Diplomates can also meet MOC recertification requirements by using CathPCI Registry data to earn up to 80 points toward evaluation of practice performance through the self-directed PIM.

As of October, 2013, more than 1,600 hospitals across the U.S. are submitting data to the CathPCI registry and it has more than 15 million patient records. Eligible patients are adults (18 years of age and older) who undergo a diagnostic cardiac catheterization and/or PCI.

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.2. We are continuously seeking opportunities to advocate for expanded use of this measure in government or other programs, including those intended for accountability or public reporting. The ACC, AHA and PCPI do not have any policies that would restrict access to the performance measure specifications or results or that would impede implementation of the measure for any application. We would welcome its implementation in emerging applications such as accountable care organizations (ACO), Medicare Advantage insurance plans or health plans selling on the new insurance marketplace.

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.)

The measure is currently in use. However, we are continuously seeking opportunities to advocate for expanded use of this measure

in government or other programs, including those intended for accountability or public reporting.

Accordingly, the PCI: Comprehensive Documentation of Indications for PCI measure has been identified for review and determination of use in the American College of Cardiology (ACC) National Cardiovascular Data Registry (NCDR®) Voluntary Hospital Public Reporting Program.

In July, 2013, The ACC kicked off a program to give hospitals the opportunity to voluntarily publicly report their measure results based on data from the National Cardiovascular Data Registry (NCDR). Hospitals that choose to participate will have their results displayed on ACC's CardioSmart and CMS's Hospital Compare websites. This voluntary program is currently in the pilot phase, with one measure (30-Day Risk-Standardized Readmission Rate following PCI) being reported, but there are plans to expand the program to include additional NQF-endorsed measures. The ACC has an infrastructure and process for NQF-endorsed measures reported through the NCDR to be considered for inclusion in the public reporting portfolio of measures.

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

In 2011 and 2012, the CathPCI registry reported a total of 295,485 PCIs. The percent of PCIs that were not mappable to AUC criteria decreased each quarter, from a high of 43.3% in Q1 of 2011 to a low of 34.3% in Q4 of 2012, reflecting an improvement in the number of PCIs without comprehensive documentation of clinical indications. In 2011 the mean proportion of unmappable PCIs was 41.6%. In 2012, the mean proportion of unmappable PCIs was 36.8%.

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.

While the ACCF/AHA and PCPI create measures with an ultimate goal of improving the quality of care, measurement is a mechanism to drive improvement but does not equate with improvement. Measurement can help identify opportunities for improvement with actual improvement requiring making changes to health care processes and structure. In order to promote improvement, quality measurement systems need to provide feedback to front-line clinical staff in as close to real time as possible and at the point of care whenever possible. (1)

1. Conway PH, Mostashari F, Clancy C. The future of quality measurement for improvement and accountability. JAMA. 2013 Jun 5;309(21):2215-6.

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.

We are not aware of any unintended consequences at this time, but we continuously monitor for them.

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

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.

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.

[Attachment](#) **Attachment: 2411_PCI_1_Appendix_A_1.pdf**

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): American College of Cardiology

Co.2 Point of Contact: [Penelope, Solis, comment@acc.org, 202-375-6576-](#)

Co.3 Measure Developer if different from Measure Steward: American College of Cardiology

Co.4 Point of Contact: [Jensen, Chiu, jensen.chiu@acc.org, 202-375-6285-](#)

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.

Work Group Members

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ACCF/AHA/PCPI/NCQA measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the ACCF/AHA/PCPI/NCQA strive to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2013

Ad.3 Month and Year of most recent revision:

Ad.4 What is your frequency for review/update of this measure? Coding/Specifications updates occur annually. See additional information section for more details.

Ad.5 When is the next scheduled review/update for this measure? 12, 2014

Ad.6 Copyright statement: Physician performance measures and related data specifications were developed by the American Medical Association (AMA) convened Physician Consortium for Performance Improvement® (PCPI®), the American College of Cardiology (ACC), the American Heart Association (AHA) and the National Committee for Quality Assurance (NCQA) to facilitate quality improvement activities by physicians. 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. While copyrighted, they can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the performance measures for commercial gain, or incorporation of the performance measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the measures require a license agreement between the user and the AMA (on behalf of the PCPI), or the ACC, or the AHA or the NCQA. Neither the AMA, ACC, AHA, NCQA, the PCPI nor its members shall be responsible for any use of these measures.

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Ad.8 Additional Information/Comments: The ACCF/AHA/PCPI/NCQA have a formal measurement review process that stipulates regular (usually on a three-year cycle, when feasible) review of the measures. The process can also be activated if there is a major change in scientific evidence, results from testing or other implementation issues are noted that materially affect the integrity of the measure.