



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 #: 0163

Corresponding Measures: 0163e

De.2. Measure Title: Primary PCI received within 90 minutes of hospital arrival

Co.1.1. Measure Steward: @cms.hhs.gov

De.3. Brief Description of Measure: Percentage of acute myocardial infarction (AMI) patients with ST-segment elevation or LBBB on the ECG closest to arrival time receiving primary percutaneous coronary intervention (PCI) during the hospital stay with a time from hospital arrival to PCI of 90 minutes or less.

1b.1. Developer Rationale: An early PCI reduces the risk of death in patients with ST-segment elevation myocardial infarction (STEMI). Hospital performance rates have gradually increased over the years this measure has been reported to the public. Providers understand the importance of promptly performing a PCI on their STEMI patients. Ongoing use of this measure will help ensure that high performing providers maintain high performance and the relatively lower performing providers have an impetus to improve.

S.4. Numerator Statement: AMI patients whose time from hospital arrival to primary percutaneous coronary intervention (PCI) is 90 minutes or less.

S.7. Denominator Statement: Principal diagnosis of AMI (International Classification of Diseases, 9th revision, Clinical Modification [ICD-9-CM] principal diagnosis code of AMI: 410.00, 410.01, 410.10, 410.11, 410.20, 410.21, 410.30, 410.31, 410.40, 410.41, 410.50, 410.51, 410.60, 410.61, 410.70, 410.71, 410.80, 410.81, 410.90, 410.91); and PCI procedure (International Classification of Diseases, 9th revision, Clinical Modification [ICD-9-CM] principal or other procedure code for PCI: 00.66); and ST-segment elevation or LBBB on the ECG performed closest to hospital arrival; and PCI performed within 24 hours after hospital arrival.

S.10. Denominator Exclusions: Exclusions:

- <18 years of age
- Patients who have a length of stay greater than 120 days
- Patients enrolled in clinical trials
- Patients received as a transfer from an inpatient or outpatient department of another hospital
- Patients received as a transfer from the emergency/observation department of another hospital
- Patients received as a transfer from an ambulatory surgery center
- Patient administered fibrinolytic agent prior to PCI
- PCI described as non-primary by physician, advanced practice nurse, or physician assistant
- Patients who did not receive PCI within 90 minutes and had a documented reason for delay in PCI

De.1. Measure Type: Process

S.23. Data Source: Claims, Paper Medical Records

S.26. Level of Analysis: Facility, Other, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: May 09, 2007 **Most Recent Endorsement Date:** Jan 18, 2012

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? N/A

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
[0163_Evidence_MSF5.0_Data.doc](#)

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)

An early PCI reduces the risk of death in patients with ST-segment elevation myocardial infarction (STEMI). Hospital performance rates have gradually increased over the years this measure has been reported to the public. Providers understand the importance of promptly performing a PCI on their STEMI patients. Ongoing use of this measure will help ensure that high performing providers maintain high performance and the relatively lower performing providers have an impetus to improve.

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.

National performance rates:

2Q09: 87.1%

3Q09: 88.2%

4Q09: 89.2%

1Q10: 90.0%

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.

Clinical warehouse data:

2Q09: 13,872 AMI patients, 1,456 hospitals

3Q09: 13,467 AMI patients, 1,467 hospitals

4Q09: 14,147 AMI patients, 1,470 hospitals

1Q10: 14,428 AMI patients, 1,504 hospitals

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.

At the univariate analysis level (unadjusted odds ratios) rates ranged from 81.4% for African-Americans, to 83.8% for Hispanic/Latinos, 84.7% for Native Americans, 87.2% for Asians/Pacific Islanders, and 88.1% for White/Caucasians. The difference from the lowest to the highest rates was 6.7 percentage points. The rate for Caucasians was higher than the rates for all minority groups.

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.

2009 Clinical warehouse data (Total 52,767 patients with race not missing): 43,171 Caucasian patients, 4,234 African-American patients, 3,936 Hispanic patients, 1,237 Asian/Pacific Islander patients, and 189 Native American patients.

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

The measure addresses:

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

1c.1. Demonstrated high priority aspect of healthcare

Affects large numbers, A leading cause of morbidity/mortality, Severity of illness, 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 785,000 Americans will have a new coronary event, and approximately 470,000 will have a recurrent event. An estimated additional 195,000 silent first myocardial infarctions occur each year. Approximately every 25 seconds, an American will have a coronary event, and approximately every minute, one will die. In 2004, AMI resulted in 695,000 hospital stays and \$31 billion in health expenditures. The risk of further cardiovascular complications, including recurrent MI, sudden cardiac death, heart failure, stroke, and angina pectoris, among AMI survivors is substantial.

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

· Lloyd-Jones D, Adams RJ, Brown TM, Carnethon M, Dai S, De Simone G, Ferguson TB, Ford E, Furie K, Gillespie C, Go A, Greenlund K, Haase N, Hailpern S, Ho PM, Howard V, Kissela B, Kittner S, Lackland D, Lisabeth L, Marelli A, McDermott MM, Meigs J, Mozaffarian D, Mussolino M, Nichol G, Roger VL, Rosamond W, Sacco R, Sorlie P, Stafford R, Thom T, Wasserthiel-Smoller S, Wong ND, Wylie-Rosett J; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2010 update: a report from the American Heart Association. *Circulation*. 2010;121:e46–e215.

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

2. Reliability and Validity—Scientific Acceptability of Measure Properties

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

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

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

Cardiovascular, Cardiovascular : Coronary Artery Disease (AMI), Cardiovascular : Coronary Artery Disease (PCI)

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

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

<http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228773564870> - Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI)

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)

No data dictionary Attachment:

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

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.

AMI patients whose time from hospital arrival to primary percutaneous coronary intervention (PCI) is 90 minutes or less.

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.)

Numerator: From hospital arrival through 90 minutes after hospital arrival.

Denominator: From hospital arrival through 24 hours after hospital arrival.

S.6. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Refer to

<http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228773564870>:

- Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-75 through 1-80 and 1-180 through 1-184.
- Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – page AMI-8a-1.

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

Principal diagnosis of AMI (International Classification of Diseases, 9th revision, Clinical Modification [ICD-9-CM] principal diagnosis code of AMI: 410.00, 410.01, 410.10, 410.11, 410.20, 410.21, 410.30, 410.31, 410.40, 410.41, 410.50, 410.51, 410.60, 410.61, 410.70, 410.71, 410.80, 410.81, 410.90, 410.91); and PCI procedure (International Classification of Diseases, 9th revision, Clinical Modification [ICD-9-CM] principal or other procedure code for PCI: 00.66); and ST-segment elevation or LBBB on the ECG performed closest to hospital arrival; and PCI performed within 24 hours after hospital arrival.

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

Elderly

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)

ICD-9-CM Principal Diagnosis codes:

- 410.00: Anterolateral wall, acute myocardial infarction-episode of care unspecified
- 410.01: Anterolateral wall, acute myocardial infarction-initial episode
- 410.10: Other anterior wall, acute myocardial infarction-episode of care unspecified
- 410.11: Other anterior wall, acute myocardial infarction-initial episode
- 410.20: Inferolateral wall, acute myocardial infarction-episode of care unspecified
- 410.21: Inferolateral wall, acute myocardial infarction-initial episode
- 410.30: Inferoposterior wall, acute myocardial infarction-episode of care unspecified
- 410.31: Inferoposterior wall, acute myocardial infarction-initial episode
- 410.40: Other inferior wall, acute myocardial infarction-episode of care unspecified
- 410.41: Other inferior wall, acute myocardial infarction-initial episode

410.50: Other lateral wall, acute myocardial infarction-episode of care unspecified

410.51: Other lateral wall, acute myocardial infarction-initial episode

410.60: True posterior wall, acute myocardial infarction-episode of care unspecified

410.61: True posterior wall, acute myocardial infarction-initial episode

410.70: Subendocardial, acute myocardial infarction-episode of care unspecified

410.71: Subendocardial, acute myocardial infarction-initial episode

410.80: Other specified sites, acute myocardial infarction-episode of care unspecified

410.81: Other specified sites, acute myocardial infarction-initial episode

410.90: Unspecified site, acute myocardial infarction-episode of care unspecified

410.91: Unspecified site, acute myocardial infarction-initial episode

ICD-9-CM Principal or Other Procedure code: 00.66: Percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy

First PCI Date, First PCI Time, and Initial ECG Interpretation - Refer to

<http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228773564870>:

• Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-180 through 1-184 and 1-234 through 1-237.

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

Exclusions:

- <18 years of age
- Patients who have a length of stay greater than 120 days
- Patients enrolled in clinical trials
- Patients received as a transfer from an inpatient or outpatient department of another hospital
- Patients received as a transfer from the emergency/observation department of another hospital
- Patients received as a transfer from an ambulatory surgery center
- Patient administered fibrinolytic agent prior to PCI
- PCI described as non-primary by physician, advanced practice nurse, or physician assistant
- Patients who did not receive PCI within 90 minutes and had a documented reason for delay in PCI

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)*

Refer to

<http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228773564870>:

- Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-19 through 1-20, 1-75 through 1-80, 1-96, 1-106 through 1-108, 1-123 through 1-124, 1-174, 1-180 through 1-184, 1-206, 1-209 through 1-210, 1-234 through 1-237, 1-270 through 1-271, 1-320 through 1-322, and 1-434 through 1-435.
- Appendices | Appendix C - Medication Tables PDF – page Appendix C-8 through Appendix C-9.
- Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-4 plus AMI-8a-1 through AMI-8a-2.

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)*

N/A

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)*

N/A

S.15. Detailed risk model specifications *(must be in attached data dictionary/code list Excel or csv file. Also indicate if available at*

measure-specific URL identified in S.1.)

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

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

S.16. Type of score:

Rate/proportion

If other:

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

Better quality = Higher score

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

Refer to

<http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228773564870>:
Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-8a-4 through AMI-8a-6.

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)

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.

Patients admitted to the hospital for inpatient acute care with an ICD-9-CM Principal Diagnosis Code for AMI as defined in section 2a.8, a patient age greater than or equal to 18 years, and a length of stay less than or equal to 120 days would be included in the initial patient population and eligible to be sampled.

Monthly Sample Size Based on Population Size (Average monthly initial patient population size: Minimum required sample size):

>= 516: 104

131-515: 20% of Initial Patient Population size

26-130: 26

< 26: 100%

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.

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

Required for Composites and PRO-PMs.

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

If other, please describe in S.24.

Claims, Paper Medical Records

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

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
[Centers for Medicare & Medicaid Services \(CMS\) Abstraction & Reporting Tool \(CART\)](#). Vendor tools also available.

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)
[URL](#)

S.26. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)
[Facility, Other, Population : Regional and State](#)

S.27. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)
[Inpatient/Hospital](#)
If other:

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

2a. Reliability – See attached Measure Testing Submission Form

2b. Validity – See attached Measure Testing Submission Form

[0163_MeasureTesting_MS5.0_Data.doc](#)

3. Feasibility

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

3a. Byproduct of Care Processes

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

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

[generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition, 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)

[No](#)

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.

[Retooling work with HHS is expected to be completed in 2011.](#)

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.
 Revisions made to the Reason for Delay in PCI abstraction guidelines have reduced abstraction burden. In October 2007 and October 2009, guidelines were revised so that abstractors no longer need to look for explicit physician linkage between certain specific clinical conditions and the delay in PCI (see 4d.1, #2 above). Additionally, documentation criteria for identifying a reason for delay were made more restrictive in October 2008 to reduce subjective interpretation by the abstractor. This decreased abstraction burden and improved reliability of the Reason for Delay in PCI data element. Lastly, the Initial ECG Interpretation data element was significantly streamlined in April 2008, and a step-by-step abstraction methodology was constructed to help abstractors through the challenging collection of this type of data.

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).

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)
Payment Program	

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

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

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

4b. Improvement

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

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

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

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

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

4c. Unintended Consequences

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

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

1. Since the time of last NQF endorsement (May 2007), feedback was received from a number of providers concerning the exclusion for any fibrinolytic administration in this measure. Providers argued this approach inadvertently captures then excludes a number of cases where fibrinolysis was not used as the primary means for reperfusion – cases appropriate for inclusion in our measure (PCI used as primary reperfusion strategy). Abstraction guidelines were revised to include cases where fibrinolytic therapy was given either during the PCI (e.g., facilitated PCI) or after the PCI.

2. Feedback was also received concerning the documentation requirements of the Reason for Delay in PCI data element. In cases where the patient experiences a cardiac arrest, or requires either intubation or balloon pump insertion, physicians/advanced practice nurses/physician assistants were required to explicitly link such a circumstance to a delay in PCI in order to meet exclusion criteria (just like any other circumstance). They argued that these are scenarios where it is inherently necessary to take the time to stabilize the patient before PCI - the linkage should be considered implicit – and that such a design was resulting in a substantial amount of “false failures” in measure results. In response, the decision was made to lift such documentation requirements for a small number of reasons. In these particular cases, revisions were made to allow physician/advanced practice nurse/physician assistant documentation that an arrest, intubation, or balloon pump insertion occurred within 90 mins. after hospital arrival to automatically count as an acceptable reason for why PCI may have been delayed beyond the 90 min. window, thereby excluding the case without documentation explicitly linking the reason with the delay.

3. The denominator exclusion “Patients who did not receive PCI within 90 minutes and had a reason for delay documented by a physician/advanced practice nurse/physician assistant” had allowed for any physician/advanced practice nurse/physician assistant reason for delay to count as an exclusion. Feedback was later received from providers and the CDAC abstractors/validators that cases were occasionally excluded when it was most appropriate for the case to fail – cases where there was a reason for delay in PCI that was not a clinical, patient-oriented reason, but rather a “system” type of reason (e.g., unavailability of cath lab or cath lab staff). Revisions were made to the data element specifications for April 2007+ discharges to no longer count such reasons as acceptable. It is believed that the number of “false exclusions” has significantly decreased as a result. Yet overuse of this exclusion continues to carry the potential for distorting performance rates. Current overall trends in measure numerator and denominator counts do not suggest obvious gaming of the measure. There is no increasing trend in the use of this reason data element. Nevertheless, exclusion rates for this measure will continue to be monitored for consistency, from quarter to quarter.

4. The data elements used in this measure are closely tracked. Questions submitted by abstractors are recorded, and trends related to published abstraction guidelines and disagreements over measure inclusions and exclusions in general are discussed in-depth every 6 months. Revisions in measure specifications, including data element definitions, are made as issues surface (e.g., what constitutes acceptable physician documentation of a reason for a delay in PCI, how to abstract PCI date/time as documentation shifts with use of new thrombectomy or balloon devices or computerized cath lab documentation systems). The frequency of questions pertaining to each data element is tracked by the Hospital Inpatient Quality Reporting Program QIOS. Clearly the number of questions a data element receives is another indication of how difficult the specifications for the measure

might be. Frequency reports are reviewed regularly, to help identify where issues in data element definitions may exist. Of note, in an August 2010 report run by the Hospital Inpatient Quality Reporting Program QIOSC, the number of questions about the abstraction of the four data elements unique to this measure, First PCI Date, First PCI Time, Non-Primary PCI, and Reason for Delay in PCI, amounted to 89, 20.4% of the total 458 Quest questions received for AMI for that month. Lastly, CDAC validation reports (which compare hospital data to CDAC data) and internal CDAC abstractor accuracy reports are monitored, to ensure good quality data. In sum, issues which may surface in questions submitted by users and CDAC validation/accuracy reports will continue to be closely monitored to identify any additional problems, and revisions will be made if warranted.

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.

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:

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): @cms.hhs.gov

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Co.3 Measure Developer if different from Measure Steward: [Mathematica Policy Research](#)

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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.

This measure is reviewed and maintained by the Heart Care Technical Expert Panel. Quarterly teleconferences are held to discuss issues pertinent to this measure (and its specifications) and potential revisions. Current members:

[Frederick Masoudi, MD, MSPH](#) Workgroup Chair: Associate Professor of Medicine (Cardiology), University of Colorado, Denver

[Don Casey, MD, MPH, MBA](#): VP Quality and Chief Medical Officer, Atlantic Health, Rep. of the American College of Physicians

[Elizabeth Delong, PhD](#): Professor and Chair, Duke University, Biostatistics and Bioinformatics, Co-Director, Outcomes Research and Assessment

[Joseph Drozda, MD](#): Clinical Investigator, Mercy Health Research, Executive Committee Member, PCPI, Rep. of American Medical Association

[John P. Erwin, III](#): Professor of Medicine, Co-Director, Cardiovascular Fellowship Program, Hospital Champion, Acute Myocardial Infarction Quality Improvement, Scott and White Hospital and Clinic

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[Lee Green, MD](#): Professor, University of Michigan Medical School

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[Harlan Krumholz, MD](#): Harold H. Hines, Jr. Professor of Medicine and Epidemiology and Public Health, Yale University School of Medicine

[Jerod Loeb, PhD](#): Executive Vice President, Quality Measurement & Research, The Joint Commission

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Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 1999

Ad.3 Month and Year of most recent revision: 10, 2010

Ad.4 What is your frequency for review/update of this measure? Every 6 months

Ad.5 When is the next scheduled review/update for this measure? 07, 2011

Ad.6 Copyright statement:

Ad.7 Disclaimers:

Ad.8 Additional Information/Comments: