NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0289   **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Median Time to ECG
De.2 Brief description of measure*:* Median time from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with probable cardiac chest pain).
1.1-2 Type of Measure: Process   **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 National Priority Partners Priority Area: Safety   **De.5 IOM Quality Domain**: Timeliness   **De.6 Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** Y☐ N☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** Y☐

every 3 years. Yes, information provided in contact section	N ☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ▶**Purpose:** Public reporting, Internal quality improvement Payment incentive	C Y ☐ N ☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y ☐ N ☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*):	Met Y ☐ N ☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*):	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) **Specific NPP goal**:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality **1a.2** **1a.3 Summary of Evidence of High Impact:** Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of ST-segment elevation myocardial infarction (STEMI) have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department arrival (Krumholz, 2008). Evidence supports reperfusion benefits patients with identified STEMI (Antman 2004). The diagnosis and management of STEMI patients is dependent upon practices within the emergency department. Timely ECGs assist in identifying STEMI patients and impact the choice of reperfusion strategy (Peacock, 2007). This measure will identify the median time to ECG for chest pain or AMI patients and potential opportunities for improvement to decrease the median time to ECG. **1a.4 Citations for Evidence of High Impact:** • Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. • Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures	1a C ☐ P ☐ M ☐ N ☐

Comment [KP1]: 1a. The measure focus addresses:
●a specific national health goal/priority identified by NQF's National Priorities Partners; OR
●a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

(Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.
• Peacock WF, Hollander JE, Smalling RW, and Bresler MJ. Reperfusion Strategies in the emergency treatment of ST-segment elevation myocardial infarction. Am J Emerg Med 2007; 25: 353-66.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of ST-segment elevation myocardial infarction (STEMI) have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department arrival (Krumholz, 2008). Evidence supports reperfusion benefits patients with identified STEMI (Antman 2004). The diagnosis and management of STEMI patients is dependent upon practices within the emergency department. Timely ECGs assist in identifying STEMI patients and impact the choice of reperfusion strategy (Peacock, 2007). This measure will identify the median time to ECG for chest pain or AMI patients and potential opportunities for improvement to decrease the median time to ECG.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Q1 2010 Analysis Provider Level
2583 Providers
Median 9 minutes
Min 0 minutes
Max 540 minutes *capped
5th percentile 30 minutes
10th percentile 22 minutes
25th percentile 14 minutes
75th percentile 5 minutes
90th percentile 2.5 minutes
95th percentile 1 minute

1b.3 Citations for data on performance gap:
2,582 hospitals submitted 41,965 eligible cases. Median patient time was 8 minutes. Median provider time was 9 minutes.

1b.4 Summary of Data on disparities by population group:
N/A

1b.5 Citations for data on Disparities:
N/A

1b
C ☐
P ☐
M ☐
N ☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*): Target median times are as close to arrival as possible.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*):
Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of ST-segment elevation myocardial infarction (STEMI) have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department arrival (Krumholz, 2008). Evidence supports reperfusion benefits patients with identified STEMI (Antman 2004). The diagnosis and management of STEMI patients is dependent upon practices within the emergency department. Timely ECGs assist in identifying STEMI patients and impact the choice of reperfusion strategy (Peacock, 2007). This measure will identify the median time to ECG for chest pain or AMI patients and potential opportunities for improvement to decrease the median time to ECG.

1c
C ☐
P ☐
M ☐
N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   3

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g.,   ... [1]

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*):
A ABC Scale ACC/AHA

1c.6 Method for rating evidence: ABC Scale
• 	Level A (randomized controlled trial/ meta-analysis):
High quality randomized controlled trial that considers all important outcomes. High-quality meta-analysis (quantitative systematic review) using comprehensive search strategies.
• 	Level B (other evidence):
A well-designed, nonrandomized clinical trial. A nonquantitative systematic review with appropriate search strategies and well-substantiated conclusions. Includes lower quality randomized controlled trials, clinical cohort studies, and case-controlled studies with nonbiased selection of study participants and consistent findings. Other evidence, such as high-quality, historical, uncontrolled studies, or well-designed epidemiologic studies with compelling findings, is also included.
• 	Level C (consensus/expert opinion):
Consensus viewpoint or expert opinion. Expert opinion is sometimes the best evidence available.

1c.7 Summary of Controversy/Contradictory Evidence: N/A

1c.8 Citations for Evidence (*other than guidelines*): • Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.
• 	Peacock WF, Hollander JE, Smalling RW, and Bresler MJ. Reperfusion Strategies in the emergency treatment of ST-segment elevation myocardial infarction. Am J Emerg Med 2007; 25: 353-66.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
"A 12-lead ECG should be performed and shown to an experienced emergency physician within 10 minutes of ED arrival for all patients with chest discomfort (or anginal equivalent) or other symptoms suggestive of STEMI. The 12-lead ECG in the ED is at the center of the therapeutic decision pathway because of the strong evidence that ST-segment elevation identifies patients who benefit from reperfusion therapy." Page 595

1c.10 Clinical Practice Guideline Citation: Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
1c.11 National Guideline Clearinghouse or other URL: N/A

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
B ABC Scale ACC/AHA

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*):
N/A

1c.14 Rationale for using this guideline over others:
ACC/AHA Strength of Evidence and Meta Analysis

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	1
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? Rationale:	1 Y☐ N☐
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A** - The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B** - The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C** - The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D** - The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I** - The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Ratin g

2a. MEASURE SPECIFICATIONS	

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*):
Continuous Variable Statement:
Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with Probable Cardiac Chest Pain)

Included Populations:
•   ICD-9-CM Principal or Other Diagnosis Code for AMI as defined in Appendix A1, OP Table 6.1 or an ICD-9-CM Principal or Other Diagnosis Code for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A1, OP Table 6.1a, and
•   E/M Code for emergency department encounter as defined in Appendix A1, OP Table 1.0a, and
•   Patients receiving an ECG as defined in the Appendix A1, and
•   Patients discharged/transferred to a short term general hospital for inpatient care, to a Federal healthcare facility, or to a Critical Access Hospital.

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
During the measurement period.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Patients with:
•   An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0, and
•   Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
•   An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1 or an ICD-9-CM Principal or Other Diagnosis Codes for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a, and
•   Patients receiving an ECG as defined in the Data Dictionary

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*):
Continuous Variable Statement:
Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with Probable Cardiac Chest Pain)

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 18 years of age and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
During the measurement period.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
Patients with:
•   An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0, and
•   Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and

2a-spec s

C☐
P☐
M☐
N☐

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

• An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1 or an ICD-9-CM Principal or Other Diagnosis Codes for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a, and
• Patients receiving an ECG as defined in the Data Dictionary

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*): •
Patients less than 18 years of age

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
Specifications available at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Continuous variable
2a.20 Interpretation of Score: Better quality = Lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
Specifications available at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):
N/A

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Sampling Approaches
As previously stated in this section, hospitals have the option to sample from their population, or submit their entire population. Hospitals that choose to sample must ensure that the sampled data represent their outpatient population by using either the simple random sampling or systematic random sampling method and that the sampling techniques are applied consistently within a quarter. For example, quarterly samples for a sampling population must use consistent sampling techniques across the quarterly submission period.

• Simple random sampling - selecting a sample size (n) from a population of size (N) in such a way that every case has the same chance of being selected.
• Systematic random sampling - selecting every kth record from a population of size (N) in such a way that a sample size of n is obtained, where k = N/n rounded to the lower digit. The first sample record (i.e., the starting point) must be randomly selected before taking every kth record. This is a two-step process:
a) Randomly select the starting point by choosing a number between one and k using a table of random numbers or a computer-generated random number; and
b) Then select every kth record thereafter until the selection of the sample size is completed.

Each hospital is ultimately responsible that the sampling techniques applied for their hospital adhere to the sampling requirements outlined in this manual. Performance measurement systems are responsible for ensuring that the sampling techniques are applied consistently across their client hospitals.
Monthly Sampling Guidelines
It is important to point out that if a hospital elects to use the monthly sampling guidelines, the hospital is still required to meet the minimum quarterly sampling requirements. A hospital may choose to use a larger sample size than is required. Hospitals whose population size is less than the minimum number of cases per

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

quarter for the measure set cannot sample (i.e., the entire population of cases must be selected). Given the potential for substantial variation in monthly population sizes, the monthly sample sizes should be based on the known or anticipated quarterly population size. When necessary, appropriate oversampling should be employed to ensure that the hospital meets the minimum quarterly sample size requirements. Refer to Table 3 below for guidelines in determining the number of cases that need to be sampled for each population per month per hospital based on the quarterly population size.

Table 3: Sample Size Guidelines per Month per Hospital

Population per Quarter	Monthly Sample Size
= 80	use all cases
81-100	27
101-125	32
126-150	37
151-175	41
176-200	44
201-225	48
226-250	51
251-275	54
276-300	57
301-325	59
326-350	62
351-75	64
376-400	66
401-425	68
426-450	70
451-500	73
501-600	79
601-700	83
701-800	87
801-900	90
901-1,000	93
1,001-2,000	108
2,001-3,000	114
3,001-4,000	117
4,001-5,000	119
5,001-10,000	124
10,001-20,000	126

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
N/A

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289
981244

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested*)
Hospital, Ambulatory Care: Emergency Dept, Ambulatory Care: Hospital Outpatient

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS	
2b. Reliability testing **2b.1 Data/sample** *(description of data/sample and size)*: Currently undergoihg validation through the CMS CLinical Data Abstraction Center **2b.2 Analytic Method** *(type of reliability & rationale, method for testing)*: N/A **2b.3 Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*: N/A	**2b** C☐ P☐ M☐ N☐
2c. Validity testing **2c.1 Data/sample** *(description of data/sample and size)*: Currently undergoihg validation through the CMS CLinical Data Abstraction Center **2c.2 Analytic Method** *(type of validity & rationale, method for testing)*: N/A **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*: N/A	**2c** C☐ P☐ M☐ N☐
2d. Exclusions Justified **2d.1 Summary of** Evidence supporting exclusion(s): N/A **2d.2 Citations for Evidence:** N/A **2d.3 Data/sample** *(description of data/sample and size)*: N/A **2d.4 Analytic Method** *(type analysis & rationale)*: N/A **2d.5 Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: N/A	**2d** C☐ P☐ M☐ N☐ NA☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)*: N/A **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)*: N/A **2e.3 Testing Results** *(risk model performance metrics)*: N/A **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:** N/A	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: N/A **2f.2 Methods to identify** statistically significant and practically/meaningfully differences **in performance** *(type of analysis & rationale)*:	**2f** C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   8

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 ... [2]

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND ... [3]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical ... [4]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American ... [5]

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant differe ... [6]

N/A

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Q1 2010 Analysis Provider Level
2583 Providers
Median 9 minutes
Min 0 minutes
Max 540 minutes *capped
5th percentile 30 minutes
10th percentile 22 minutes
25th percentile 14 minutes
75th percentile 5 minutes
90th percentile 2.5 minutes
95th percentile 1 minute

2g. Comparability of Multiple Data Sources/Methods	
2g.1 Data/sample *(description of data/sample and size)*: N/A	2g
2g.2 Analytic Method *(type of analysis & rationale)*: N/A	C☐ P☐ M☐ N☐ NA☐
2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*: N/A	

> **Comment [KP20]:** 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2h. Disparities in Care	2h
2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: N/A	C☐ P☐ M☐ N☐ NA☐
2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: N/A	

> **Comment [KP21]:** 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	2
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met? **Rationale:**	2 C☐ P☐ M☐ N☐

3. USABILITY	

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating

3a. Meaningful, Understandable, and Useful Information	
3a.1 Current Use: In use	
3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) *(If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years)*: CMS Hospital Outpatient Quality Data Reporting Program http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244	3a C☐ P☐ M☐ N☐
3a.3 If used in other programs/initiatives *(If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI*	

> **Comment [KP22]:** 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

within 3 years):
N/A

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample (*description of data/sample and size*): N/A

3a.5 Methods (*e.g., focus group, survey, QI project*):
N/A

3a.6 Results (*qualitative and/or quantitative results and conclusions*):
N/A

3b/3c. Relation to other NQF-endorsed measures

3b.1 NQF # and Title of similar or related measures:

(for NQF staff use) Notes on similar/related endorsed or submitted measures:

3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** C☐ P☐ M☐ N☐

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   10

Comment [KP23]: **3b.** The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: **3c.** Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: **4a.** For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: **4b.** The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Pending funding, e-specifications will be developed.

4c. Exclusions

4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?
No

4c.2 If yes, provide justification.

4c
C ☐
P ☐
M ☐
N ☐
NA ☐

> **Comment [KP28]:** 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.
N/A

4d
C ☐
P ☐
M ☐
N ☐

> **Comment [KP29]:** 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

4e. Data Collection Strategy/Implementation

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
Limited abstraction burden.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*):
N/A

4e.3 Evidence for costs:
N/A

4e.4 Business case documentation: N/A

4e
C ☐
P ☐
M ☐
N ☐

> **Comment [KP30]:** 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility?*

4

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met?
Rationale:

4
C ☐
P ☐
M ☐
N ☐

RECOMMENDATION

(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.

Time-limited
☐

Steering Committee: Do you recommend for endorsement?
Comments:

Y ☐
N ☐
A ☐

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.2 Point of Contact
Wanda, Govan-Jenkins, MS, MBA, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-

Measure Developer If different from Measure Steward
Co.3 Organization

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Oklahoma Foundation for Medical Quality, 14000 Quail Springs Parkway, Suite 400, Oklahoma City, Oklahoma, 73134-2600

Co.4 Point of Contact
Wanda, Govan-Jenkins, MS, MBA, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-

Co.5 Submitter If different from Measure Steward POC
Rebecca, Jones, MSN, RN, rjones@ofmq.com, 405-840-2891-342, Oklahoma Foundation for Medical Quality

Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
N/A

Ad.2 If adapted, provide name of original measure: N/A
Ad.3-5 If adapted, provide original specifications URL or attachment URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2008
Ad.7 Month and Year of most recent revision: 07, 2010
Ad.8 What is your frequency for review/update of this measure? Bi-annual
Ad.9 When is the next scheduled review/update for this measure? 01, 2011

Ad.10 Copyright statement/disclaimers: N/A

Ad.11 -13 Additional Information web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

Date of Submission (*MM/DD/YY*): 12/07/2010

4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

2d. Clinically necessary measure exclusions are identified and must be:
• supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; AND
• a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; AND
• precisely defined and specified:
 – if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

2e. For outcome measures and other measures (e.g., resource use) when indicated:
• an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR
rationale/data support no risk adjustment.

13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

HOSPITAL OUTPATIENT DEPARTMENT QUALITY MEASURES
Acute Myocardial Infarction (AMI) and Chest Pain

Set Measure ID #	Measure Short Name
OP-1[1]	Median Time to Fibrinolysis
OP-2[1]	Fibrinolytic Therapy Received Within 30 Minutes
OP-3[1]	Median Time to Transfer to Another Facility for Acute Coronary Intervention
OP-4[2]	Aspirin at Arrival
OP-5[2]	Median Time to ECG

[1]Measures only applicable to AMI Population

[2]Measures apply to both the AMI Population and Chest Pain Population

OP AMI AND CHEST PAIN GENERAL DATA ELEMENT LIST

General Data Element Name	Collected For:
Arrival Time	All Records
Birthdate	All Records
CMS Certification Number[3,4]	All Records
First Name	All Records
Hispanic Ethnicity	All Records
Last Name	All Records
National Provider Identifier[3,4]	Optional for All Records
Outpatient Encounter Date	All Records
Patient HIC#	Collected by CMS for patients with a *Payment Source* of Medicare who have a standard HIC number
Patient Identifier	All Records
Payment Source	All Records
Physician 1	Optional for All Records
Physician 2	Optional for All Records
Postal Code	All Records
Race	All Records
Sex	All Records

[3]Transmission Data Element

[4]Defined in the Transmission Data Element List within the Hospital Outpatient Measure Data Transmission section of this manual

OP AMI AND CHEST PAIN SPECIFIC DATA ELEMENT LIST

OP AMI and CP Data Element Name	Collected For:
Aspirin Received	OP-4
Discharge Date and Time	OP-3
Discharge Status	OP-1, OP-2, OP-3, OP-4, OP-5
E/M Code	OP-1, OP-2, OP-3, OP-4, OP-5
ECG	OP-5
ECG Date and Time	OP-5
Fibrinolytic Administration	OP-1, OP-2, OP-3
Fibrinolytic Administration Date and Time	OP-1, OP-2
ICD-9-CM Other Diagnosis Codes	OP-4, OP-5
ICD-9-CM Principal Diagnosis Code	OP-1, OP-2, OP-3, OP-4, OP-5
Initial ECG Interpretation	OP-1, OP-2, OP-3
Probable Cardiac Chest Pain	OP-4, OP-5
Reason for Delay in Fibrinolytic Therapy	OP-1, OP-2
Reason for No Aspirin on Arrival	OP-4
Reason for Not Administering Fibrinolytic Therapy	OP-3
Transfer for Acute Coronary Intervention	OP-3

OP-1, OP-2, OP-3, OP-4, and OP-5 Hospital Outpatient Population

The Hospital Outpatient AMI/Chest Pain measures have two distinct populations.

Acute Myocardial Infarction

The population of the OP-1 through OP-5 AMI measures is identified using 5 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-1 through OP-5 AMI Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI defined in Appendix A, OP Table 1.1.

Chest Pain

The population of the OP-4 and OP-5 Chest Pain measures is identified using 6 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Other Diagnosis Codes*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-4 and OP-5 Chest Pain Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal or Other Diagnosis Codes* for Chest Pain as defined in Appendix A, OP Table 1.1a.

Patients with an *ICD-9-CM Principal Diagnosis Code* for AMI are not eligible for the Chest Pain Hospital Outpatient Population

Specifications Manual for Hospital Outpatient Department Quality Measures   AMI-CP-3
Encounter dates 07-01-11 (3Q11) through 12-31-11 (4Q11) v.4.1

AMI Hospital Outpatient Population Algorithm
(OP-1 through OP-5)

Start AMI Hosptial Outpatient Measure Set Population Logic (cases eligible for OP-1 through OP-5) — **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code
- Not on OP Table 1.0 (Appendix A)
- On OP Table 1.0 (Appendix A)

Discharge Status
- = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70
- = 02 or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date* minus *Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date
- < 18 years
- > = 18 years

ICD-9-CM Principal Diagnosis Code
- Not on OP Table 1.1 (Appendix A)
- On OP Table 1.1 (Appendix A)

Patient is in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Note: For information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Patient *Not* in Outpatient AMI Population

Patient is *not* in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Patient is *not* eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "Yes"

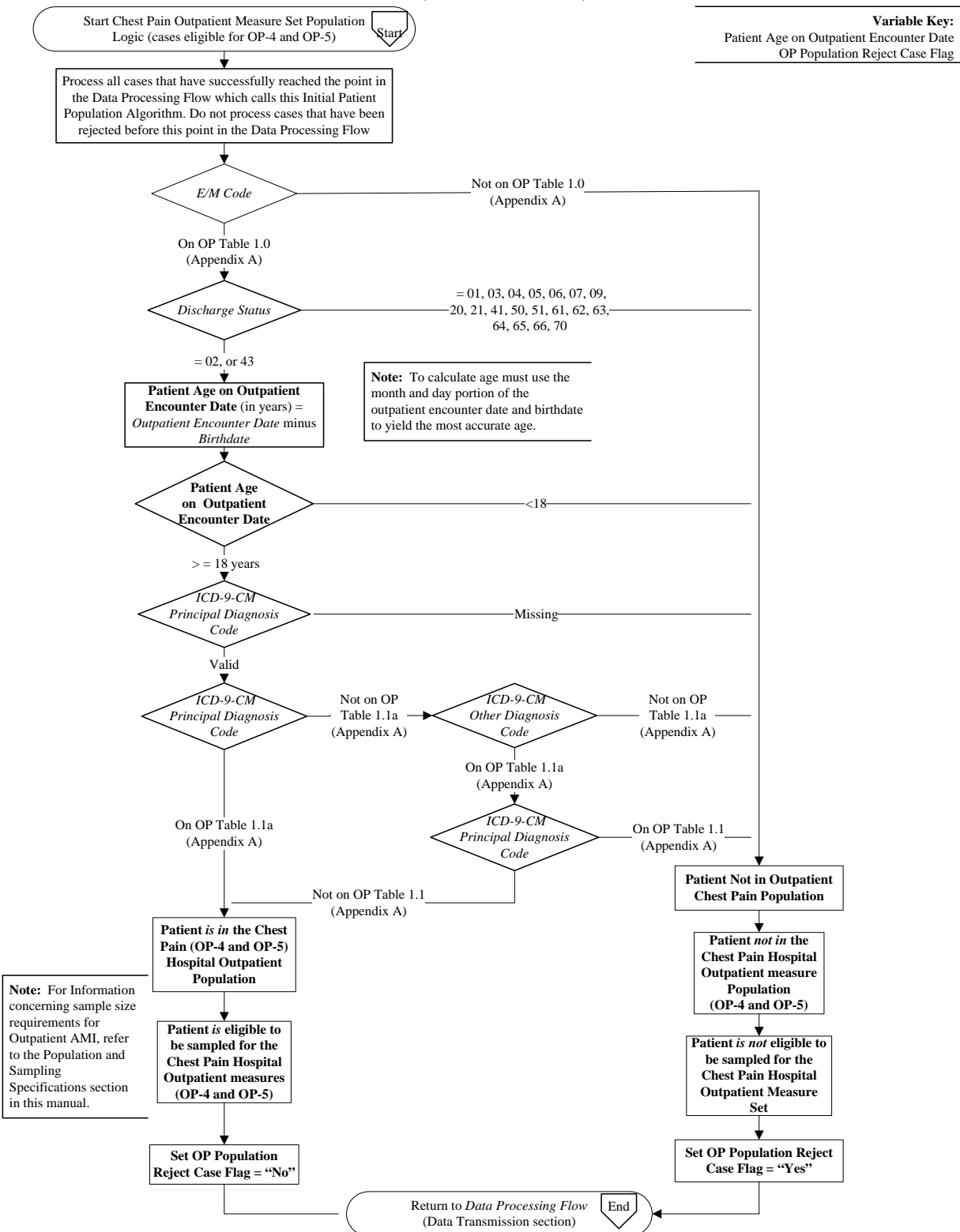Return to *Data Processing Flow* (Data Transmission section) — **End**

Algorithm Narrative for AMI Hospital Outpatient Population
(OP-1 through OP-5)

1. Start AMI Hospital Outpatient Measure Set Population logic (cases eligible for OP-1 through OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

   a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

   a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

   a. If patient age is less than 18 years, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

Chest Pain Hospital Outpatient Population Algorithm
(OP-4 and OP-5)

Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5) **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code → Not on OP Table 1.0 (Appendix A)

On OP Table 1.0 (Appendix A)

Discharge Status → = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70

= 02, or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date minus Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date → <18

> = 18 years

ICD-9-CM Principal Diagnosis Code → Missing

Valid

ICD-9-CM Principal Diagnosis Code → Not on OP Table 1.1a (Appendix A) → *ICD-9-CM Other Diagnosis Code* → Not on OP Table 1.1a (Appendix A)

On OP Table 1.1a (Appendix A)

On OP Table 1.1a (Appendix A)

ICD-9-CM Principal Diagnosis Code → On OP Table 1.1 (Appendix A)

Not on OP Table 1.1 (Appendix A)

Patient Not in Outpatient Chest Pain Population

Patient *is in* the Chest Pain (OP-4 and OP-5) Hospital Outpatient Population

Patient *not in* the Chest Pain Hospital Outpatient measure Population (OP-4 and OP-5)

Note: For Information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient *is* eligible to be sampled for the Chest Pain Hospital Outpatient measures (OP-4 and OP-5)

Patient *is not* eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Set OP Population Reject Case Flag = "Yes"

Return to *Data Processing Flow* (Data Transmission section) **End**

Algorithm Narrative for Chest Pain Hospital Outpatient Population
(OP-4 and OP-5)

1. Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

   a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

   a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

   a. If patient age is less than 18 years, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is missing, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is valid and not missing, proceed to ICD-9-CM Principal Diagnosis Code.

8. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Other Diagnosis Code.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1a, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

9. Check ICD-9-CM Other Diagnosis Code

   a. If the ICD-9-CM Other Diagnosis Code is not on Appendix A, OP Table 1.1a, Patient is Not in the Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Other Diagnosis Code is on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Principal Diagnosis Code.

10. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is Not in the Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction and Hospital Outpatient Chest Pain

Measure ID#: OP-5

Outpatient Setting: Emergency Department

Performance Measure Name: Median Time to ECG

Description: Median time from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with Probable Cardiac Chest Pain).

Rationale: Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of ST-segment elevation myocardial infarction (STEMI) have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department arrival (Krumholz, 2008). Evidence supports reperfusion benefits patients with identified STEMI (Antman 2004). The diagnosis and management of STEMI patients is dependent upon practices within the emergency department. Timely ECGs assist in identifying STEMI patients and impact the choice of reperfusion strategy (Peacock, 2007). This measure will identify the median time to ECG for chest pain or AMI patients and potential opportunities for improvement to decrease the median time to ECG.

Type of Measure: Process

Improvement Noted As: A decrease in the median value

Continuous Variable Statement: Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for AMI or Chest Pain patients (with *Probable Cardiac Chest Pain*).

> **Included Populations:**
> - An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and
> - Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
> - An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1 or an *ICD-9-CM Principal or Other Diagnosis Codes* for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a, and
> - Patients receiving an *ECG* as defined in the Data Dictionary

Excluded Populations:
- Patients less than 18 years of age

Data Elements:
- *Arrival Time*
- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *ECG*
- *ECG Date and Time*
- *ICD-9-CM Other Diagnosis Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *Outpatient Encounter Date*
- *Probable Cardiac Chest Pain*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires retrospective data entry.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section. Sampling requirements apply to each distinct hospital outpatient measure set (AMI and Chest Pain).
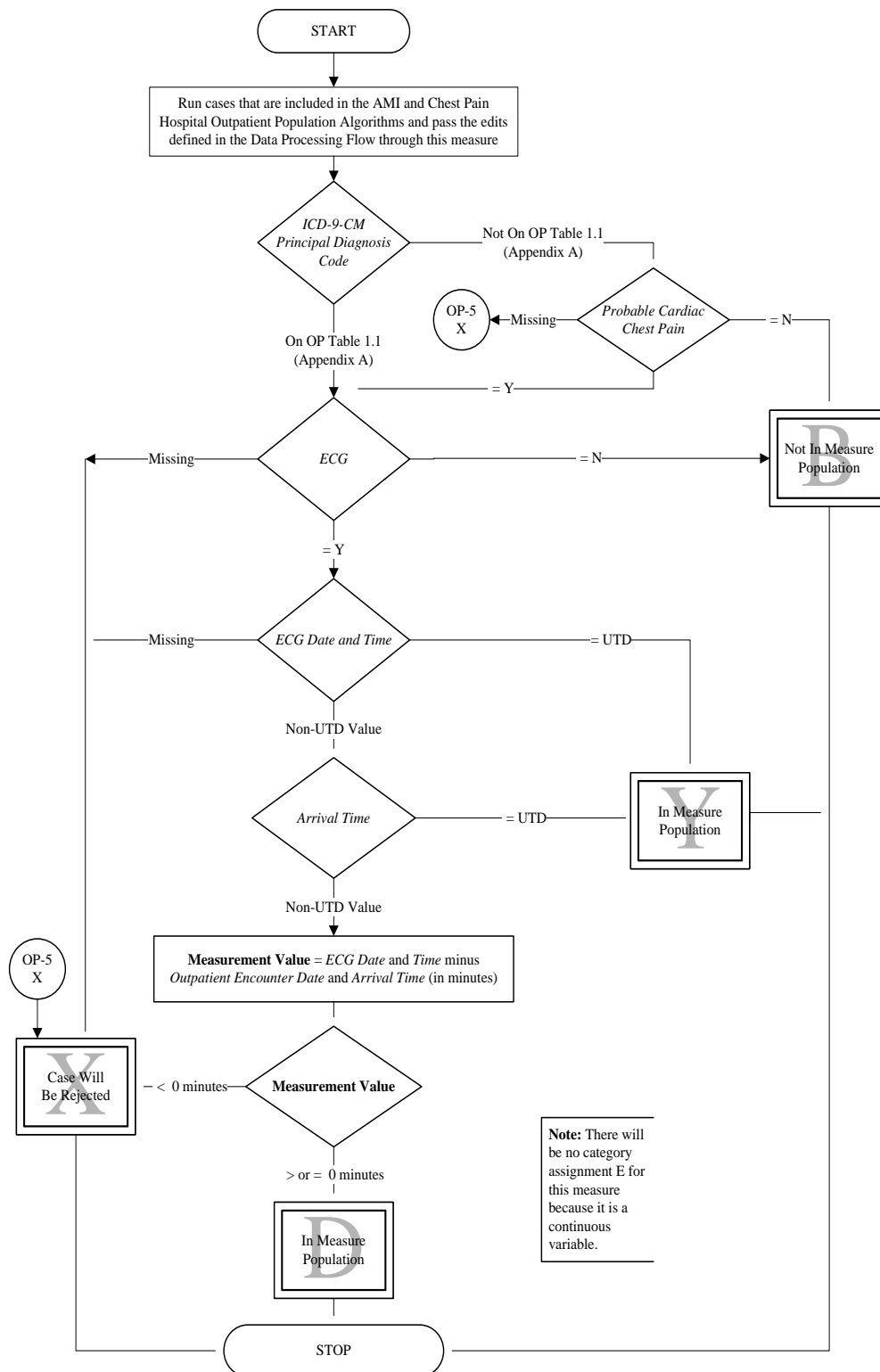
Data Reported As: Aggregate measure of central tendency

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm

- Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). *J Am Coll Cardiol.* 2008;52:2046-99.

- Peacock WF, Hollander JE, Smalling RW, and Bresler MJ. Reperfusion Strategies in the emergency treatment of ST-segment elevation myocardial infarction. *Am J Emerg Med* 2007; 25: 353-66.

OP-5: ED Median Time to ECG

Continuous Variable Statement: Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with probable cardiac chest pain).

START

Run cases that are included in the AMI and Chest Pain Hospital Outpatient Population Algorithms and pass the edits defined in the Data Processing Flow through this measure

ICD-9-CM Principal Diagnosis Code

Not On OP Table 1.1 (Appendix A)

On OP Table 1.1 (Appendix A)

OP-5 X ←Missing— *Probable Cardiac Chest Pain* — = N

= Y

ECG

Missing

= N → **B** Not In Measure Population

= Y

ECG Date and Time

Missing

= UTD

Non-UTD Value

Arrival Time

= UTD → **Y** In Measure Population

Non-UTD Value

Measurement Value = *ECG Date* and *Time* minus *Outpatient Encounter Date* and *Arrival Time* (in minutes)

OP-5 X

X Case Will Be Rejected ← < 0 minutes — **Measurement Value**

> or = 0 minutes

D In Measure Population

Note: There will be no category assignment E for this measure because it is a continuous variable.

STOP

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Algorithm Narrative for OP-5: ED Median Time to ECG

Continuous Variable Statement: Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with Probable Cardiac Chest Pain).

1. Start. Run all cases that are included in the AMI and Chest Pain Hospital Outpatient Population Algorithm and pass the edits defined in the Data Processing Flow through this measure. Proceed to ICD-9-CM Principal Diagnosis Code.

2. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, the case will proceed to Probable Cardiac Chest Pain.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, the case will proceed to ECG.

3. Check Probable Cardiac Chest Pain

   a. If Probable Cardiac Chest Pain is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Probable Cardiac Chest Pain equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Probable Cardiac Chest Pain equals YES, the case will proceed to ECG.

4. Check ECG

   a. If ECG is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If ECG equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If ECG equals YES, the case will proceed to ECG Date and Time.

5. Check ECG Date and Time

   a. If ECG Date and Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If ECG Date and Time equals UTD, the case will proceed to a Measure Category Assignment of Y. Stop processing case.

   c. If ECG Date and Time equals Non-UTD Value, the case will proceed to Arrival Time.

6. Check Arrival Time

   a. If Arrival Time equals UTD, the case will proceed to a Measure Category Assignment of Y. Stop processing case.

   b. If Arrival Time equals Non-UTD Value, the case will proceed to Measurement Value calculation.

7. Calculate the Measurement Value. Time in minutes is equal to the ECG Date and Time (in minutes) minus the Outpatient Encounter Date and Arrival Time (in minutes).

8. Check Measurement Value

   a. If Measurement Value is less than 0 minutes, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Measurement Value is greater than or equal to 0 minutes, the case will proceed to a Measure Category Assignment of D. Stop processing case.

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all <mark>yellow highlighted</mark> areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all <mark>pink</mark> highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0132 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Aspirin at arrival for acute myocardial infarction (AMI)
De.2 Brief description of measure*: Percentage of acute myocardial infarction (AMI) patients who received aspirin within 24 hours before or after hospital arrival*
1.1-2 Type of Measure: Process   **De.3** If included in a composite or paired with another measure, please identify composite or paired measure N/A
De.4 National Priority Partners Priority Area: Population health   **De.5** IOM Quality Domain: Timeliness   **De.6** Consumer Care Need: Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1** Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)? Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3** Measure Steward Agreement: Government entity and in the public domain - no agreement necessary **A.4** Measure Steward Agreement attached:	A Y ☒ N ☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	B Y ☐

every 3 years. Yes, information provided in contact section	N☐
C. The intended use of the measure includes both public reporting and quality improvement. ▶**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive	C Y☒ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y☒ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*):	Met Y☒ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*):	
Staff Reviewer Name(s): RWinkler	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality, Severity of illness, Patient/societal consequences of poor quality **1a.2** **1a.3 Summary of Evidence of High Impact:** 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. **1a.4 Citations for Evidence of High Impact:** · 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.	1a C☐ P☐ M☐ N☐
1b. Opportunity for Improvement	1b C☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   2

Comment [KP1]: 1a. The measure focus addresses:
•a specific national health goal/priority identified by NQF's National Priorities Partners; OR
•a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Early aspirin use reduces the risk of death. Hospital performance rates have gradually increased over the years this measure has been reported to the public. Providers understand the importance of giving their patients with suspected MI aspirin within 24 hours of arrival. 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.

P ☐
M ☐
N ☐

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
National performance rates:
2Q09: 98.3%
3Q09: 98.3%
4Q09: 98.5%
1Q10: 98.5%

1b.3 Citations for data on performance gap:
Clinical warehouse data:
2Q09: 84,684 AMI patients, 3,229 hospitals
3Q09: 81,391 AMI patients, 3,233 hospitals
4Q09: 86,789 AMI patients, 3,235 hospitals
1Q10: 89,484 AMI patients, 3,249 hospitals

1b.4 Summary of Data on disparities by population group:
At the univariate analysis level (unadjusted odds ratios), rates ranged from 97.2% for Hispanic/Latinos, to 97.7% for African-Americans, 98.3 for Asians/Pacific Islanders, 98.4 for White/Caucasians, and 98.8% for Native Americans. The difference from the lowest to the highest rates was 1.5 percentage points. The rate for Caucasians was higher than the rates for minority groups except Native-Americans.

1b.5 Citations for data on Disparities:
2009 Clinical warehouse data (Total 324,780 patients with race not missing): 251,158 Caucasian patients, 37,747 African-American patients, 27,316 Hispanic patients, 7,472 Asian/Pacific Islander patients, and 1,087 Native American patients.

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*): The early use of aspirin in patients with acute myocardial infarction results in a significant reduction in adverse events and subsequent mortality. The benefits of aspirin therapy on mortality are comparable to fibrinolytic therapy. The combination of aspirin and fibrinolytics provides additive benefits for patients with ST-elevation myocardial infarction. Aspirin is also effective in patients with non-ST-elevation myocardial infarction. National clinical guidelines strongly recommend early aspirin for patients hospitalized with AMI. ACC/AHA UA/NSTEMI and STEMI guidelines consider the administration of aspirin to unstable angina/NSTEMI/STEMI patients as soon as possible after hospital presentation a Class I recommendation.

1c.2-3. Type of Evidence: Evidence-based guideline, Randomized controlled trial, Systematic synthesis of research, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*):
Some of the strongest evidence available about the long-term benefits of therapy in patients with acute coronary events pertains to ASA. By irreversibly inhibiting COX-1 within platelets, ASA prevents the formation of thromboxane A2, thereby diminishing platelet aggregation. This platelet inhibition is the plausible mechanism for the clinical benefit of ASA, both because it is fully present with low doses of ASA and because platelets represent one of the principal participants in thrombus formation after plaque disruption. Among clinical investigations with ASA, trials in STEMI and NSTEMI have consistently documented a striking benefit of ASA compared with placebo independent of the differences in study design, such as time of entry after the acute phase, duration of follow-up, and dose used. The Second International Study of Infarct Survival (ISIS-2) has shown conclusively the efficacy of aspirin alone for treatment of evolving acute MI, with an absolute risk

1c
C ☐
P ☐
M ☐
N ☐

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
o Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
o Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
o Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
o Patient experience - evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
o Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
o Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status - patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

difference in 35-day mortality of 2.4% (relative risk reduction [RRR] 23%). When aspirin was combined with streptokinase, the absolute risk difference in mortality was 5.2% (RRR 42%). A meta-analysis demonstrated that aspirin reduced coronary reocclusion and recurrent ischemic events after fibrinolytic therapy. The prompt action of ASA and its ability to reduce mortality rates in patients with suspected MI enrolled in the Second International Study of Infarct Survival (ISIS-2) trial led to the recommendation that ASA be initiated immediately in the ED once the diagnosis of ACS is made or suspected. Aspirin is an important part of the early management of all patients with suspected MI (NSTEMI and STEMI) and should be given promptly after hospitalization.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*): ACCF/AHA Task Force on Practice Guidelines, Level of Evidence A: [UA/NSTEMI] Data derived from multiple randomized trials or meta-analyses, Multiple populations evaluated; [STEMI] Data derived from multiple randomized clinical trials or meta-analyses, Multiple populations evaluated.

1c.6 Method for rating evidence: [UA/NSTEMI] The methodology used by the ACCF/AHA Task Force on Practice Guidelines is fully documented in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). The guidelines are based upon a comprehensive assessment, both electronic and manual, of the English-language medical literature. This search focuses on high-quality randomized controlled trials, meta-analyses and systematic reviews, and when applicable observational studies. In some cases where higher quality data is not available, observational studies and case series are also considered. The quality of the design and execution of these studies is determined. When appropriate, data tables are generated from the available literature. After a review of the available literature, the writing committee rates the evidence according to the schemes outlined in their publication.
[STEMI] The method of rating evidence used by the Writing Committee on the Management of Patients with ST-Elevation Myocardial Infarction in 2004 is not as well documented, but is implicitly consistent with the approach described in the ACCF/AHA methodology manual. Following comprehensive searching of the scientific and medical literature on AMI, with special emphasis on STEMI, the writing committee weighed the strength of evidence for or against a particular treatment or procedure. A level of evidence rating of "A" was given when multiple (3-5) population risk strata were evaluated (data available from clinical trials or registries about the usefulness/efficacy in different sub-populations, such as gender, age, history of diabetes, history of prior MI, history of heart failure, and prior aspirin use.) and there was general consistency of direction and magnitude of effect.

1c.7 Summary of Controversy/Contradictory Evidence: Aside from avoiding use in patients with clear contraindications to aspirin therapy, there is substantial support in existing guidelines for the use of chronic aspirin therapy for secondary prevention in patients surviving AMI.

1c.8 Citations for Evidence (*other than guidelines*): · Antiplatelet Trialists' Collaboration. Collaborative overview of randomised trials of antiplatelet therapy—I: prevention of death, myocardial infarction, and stroke by prolonged antiplatelet therapy in various categories of patients (published erratum appears in BMJ 1994;308:1540). BMJ 1994;308:81–106.
·   Lewis HDJ, Davis JW, Archibald DG, et al. Protective effects of aspirin against acute myocardial infarction and death in men with unstable angina: results of a Veterans Administration Cooperative Study. N Engl J Med 1983;309:396–403.
·   Cairns JA, Gent M, Singer J, et al. Aspirin, sulfinpyrazone, or both in unstable angina: results of a Canadian multicenter trial. N Engl J Med 1985;313:1369 –75.
·   Théroux P, Ouimet H, McCans J, et al. Aspirin, heparin, or both to treat acute unstable angina. N Engl J Med 1988;319:1105–11.
·   The RISC Group. Risk of myocardial infarction and death during treatment with low dose aspirin and intravenous heparin in men with unstable coronary artery disease. Lancet 1990;336:827-30.
·   Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Lancet. 1988 Aug 13;2(8607):349-60.
·   Roux S, Christeller S, Lüdin E. Effects of aspirin on coronary reocclusion and recurrent ischemia after thrombolysis: a metaanalysis. J Am Coll Cardiol 1992;19:671-7.
·   Antithrombotic Trialists' Collaboration. Collaborative metaanalysis of randomised trials of

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

antiplatelet therapy for prevention of death, myocardial infarction, and stroke in high-risk patients. BMJ 2002;324:71-86.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
3.2.1. Antiplatelet Therapy Recommendations (p. e45)
1.   Aspirin should be administered to UA/NSTEMI patients as soon as possible after hospital presentation and continued indefinitely in patients not known to be intolerant of that medication.
 6.3.1.4. Aspirin (p. e36)
Aspirin should be chewed by patients who have not taken aspirin before presentation with STEMI. The initial dose should be: 162 mg to 325 mg. Although some trials have used enteric-coated aspirin for initial dosing, more rapid buccal absorption occurs with non-enteric-coated aspirin formulations.

1c.10 Clinical Practice Guideline Citation: [3.2.1.] Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non–ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, American College of Physicians, Society for Academic Emergency Medicine, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2007;50:e1–157.
[6.3.1.4.] Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
1c.11 National Guideline Clearinghouse or other URL: [3.2.1.]
http://content.onlinejacc.org/cgi/reprint/50/7/e1.pdf, [6.3.1.4.]
http://assets.cardiosource.com/STEMI_2004.pdf

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
Ratings made by ACCF/AHA Task Force on Practice Guidelines: [UA/NSTEMI] Class I recommendation – Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective. Benefit >>> Risk. Procedure/treatment should be performed/administered; [STEMI] Class I recommendation - Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

1c.13 **Method for r**ating strength of recommendation (*If different from* *USPSTF system*, *also describe rating and how it relates to USPSTF)*:
[UA/NSTEMI] The methodology used by the ACCF/AHA Task Force on Practice Guidelines is fully documented in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). Recommendations are assigned strength by the Task Force based upon evidence, benefit vs. risk vs. harm, and patient preference.
[STEMI] The method of rating the strength of a recommendation used by the Writing Committee on the Management of Patients with ST-Elevation Myocardial Infarction in 2004 is not as well documented but is implicitly consistent with the approach described in the ACCF/AHA methodology manual. In sum, strength is assigned based on examination of evidence and careful assessment of benefit vs. risk.
Both the ACCF/AHA Guidelines and the USPSTF assess evidence with respect to two parameters: 1) the magnitude of the benefit, and 2) the certainty of this benefit. However, they use different coding systems. In ascertaining magnitude of the benefit, the ACCF/AHA uses a Class I-III scale and the USPSTF uses a high-moderate-low scale. In determining the certainty of this benefit, the ACCF/AHA uses levels of evidence A-C and USPSTF uses a high-moderate-low scale.

1c.14 Rationale for using this guideline over others:
The ACCF/AHA guidelines are widely accepted national guidelines that address the therapy of patients with AMI; they use an explicit and transparent methodology; and have thus served as the foundation of national quality measures.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to*	1

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Measure and Report?	
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? Rationale:	1 Y☐ N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, <u>as specified</u>, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Ratin g
2a. MEASURE SPECIFICATIONS	

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

> **Comment [KP8]:** 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*):
AMI patients who received aspirin within 24 hours before or after hospital arrival

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
24 hours before hospital arrival through 24 hours after hospital arrival

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Refer to http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036:
·   Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-77 through 1-78.
·   Appendices | Appendix C - Medication Tables – pages Appendix C-3 through Appendix C-6.
·   Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-1-1 through AMI-1-5.

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*):
AMI patients (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)

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Greater than or equal to 18 years old

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
From hospital arrival to time of hospital discharge

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
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

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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

2a.9 Denominator Exclusions (*Brief text 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
•Discharged to another hospital on day of or day after arrival
•Discharged on day of arrival
•Expired on day of or day after arrival
•Left against medical advice on day of or day after arrival
•Patients with comfort measures only documented on day of or day after arrival
•Patients with a documented reason for no aspirin on arrival

> **Comment [k9]:** 11 Risk factors that influence outcomes should not be specified as exclusions.
> 12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036:
· 		Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-20 through 1-21, 1-69 through 1-71, 1-90, 1-98 through 1-104, 1-117, 1-118 through 1-120, 1-204, and 1-324 through 1-326.
· 		Appendices | Appendix C - Medication Tables PDF – pages Appendix C-3 through Appendix C-6 plus Appendix C-9, and Appendix H - Miscellaneous Tables – pages Appendix H-5.
· 		Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-1-1 through AMI-1-5.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-1-1 through AMI-1-5.

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):
Benchmarks are established using the ABC methodology, based on the actual performance of the top facilities. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
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%

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
Centers for Medicare & Medicaid Services (CMS) Abstraction & Reporting Tool (CART). Vendor tools also available.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1135267770141

2a.29-31 Data dictionary/code table web page URL or attachment: URL   Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: Section 1 - Data Dictionary | Alphabetical Data Dictionary.

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national, Program: QIO

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested*)
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample (*description of data/sample and size*): CDAC (Clinical Data Abstraction Center) validation sample: 3Q09.

2b.2 Analytic Method *(type of reliability) & rationale, method for testing)*:
CDAC validation sampling involves SDPS selection of sample of 5 cases/quarter across all topics (AMI, HF, Pneumonia, etc.) from each hospital with a minimum of 6 discharges (across all topics) in the Clinical Data Warehouse within 4 months + 15 days following 3Q09. Hospital-abstracted data is compared to CDAC-adjudicated data.

2b.3 Testing Results (*reliability statistics, assessment of adequacy in the context of norms for the test conducted*):
Arrival Date - 96.9%
Aspirin Received Within 24 Hours Before or After Hospital Arrival - 97.3%
Clinical Trial – 98.9%
Comfort Measures Only - 94.3%
Reason for No Aspirin on Arrival - 79.6%
Transfer From Another ED - 97.5%

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2c. Validity testing

2c

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

2c.1 Data/sample *(description of data/sample and size)*: Face validity is regularly assessed with the Technical Expert Panel responsible for reviewing and supporting the measure topic.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Face validity

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
N/A

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M ☐
N ☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
The exclusions of age < 18 years, length of stay > 120 days, and enrollment in a clinical trial are common to the other measures in the AMI measure set, and to the inpatient Hospital Inpatient Quality Reporting Program measure set in general. Patients with documented comfort measures only (on the day of or day after arrival) are appropriate exclusions, as the goal in these cases is palliative care – Therefore, the non-use of aspirin is often clinically appropriate. The exclusions that omit patients discharged on the day of arrival (or the day after arrival, in cases where patients are transferred to hospitals, expired, AMA, etc.) are built in to address the timing issues (the 24-hour timeframe). Lastly, there are clinically important contraindications to the use of aspirin. Reasons vary, from patient refusal, aspirin allergies, and current Coumadin therapy (on Coumadin at home), to clinical conditions such as active GI bleeding. In these types of cases, the non-use of aspirin should not count against the provider if the clinical reason for not prescribing aspirin is documented. All exclusions in this measure (with the exception of the age, length of stay, and clinical trial) are concordant with the current ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction.

2d.2 Citations for Evidence:
· Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046 -99.
· Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, American College of Physicians, Society for Academic Emergency Medicine, Society of Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2007;50:e1-157.
· Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.

2d.3 Data/sample *(description of data/sample and size)*: Clinical warehouse data: 144,251 AMI patients, 3,503 hospitals, 1Q10.

2d.4 Analytic Method *(type analysis & rationale)*:
A frequency count was conducted to calculate the percentages outlined in section 2d.5. Frequency counts are a simple, efficient way to determine the occurrence of specific values of a data element in a given data set.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Rates of Exclusion:
· Patients with comfort measures only documented on day of or day after arrival: 2.3%
· Patients enrolled in clinical trials: .5%

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NA ☐

·   Discharged on day of arrival: 1.6%
·   Discharged/transferred to another hospital for inpatient care, discharged/transferred to a federal health care facility, expired, or left against medical advice or discontinued care on day of or day after arrival: 4.6%
·   Patients with a documented reason for no aspirin on arrival: 3.1%

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: N/A

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
N/A

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

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N ☐
NA ☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: Clinical warehouse data:
2Q09: 84,684 AMI patients, 3,229 hospitals
3Q09: 81,391 AMI patients, 3,233 hospitals
4Q09: 86,789 AMI patients, 3,235 hospitals
1Q10: 89,484 AMI patients, 3,249 hospitals

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Analysts review quarterly benchmarks established (using the ABC methodology) and trends to identify differences in performance scores and investigate the possible causes. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes. If measure specifications (algorithms, data elements) are found to cause the difference in performance, they are reviewed for possible updates.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
National performance rates:
2Q09: 98.3% (benchmark 100.0%)
3Q09: 98.3% (benchmark 100.0%)
4Q09: 98.5% (benchmark 100.0%)
1Q10: 98.5% (benchmark 100.0%)

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N ☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: Both paper records and electronic health records can be used to collect data. Some allowances have been made as facilities incorporate EHRs in their facilities because vendors do not utilize identical data fields, but customize products according to facility need and preferences.

2g.2 Analytic Method *(type of analysis & rationale)*:
No tests have been performed on this measure to determine comparability of sources (paper medical record vs. EHR).

2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*:
N/A

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M ☐
N ☐
NA ☐

2h. Disparities in Care

2h
C ☐

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
●an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: Not stratified, but results according to race, sex, etc can be determined. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Since the preliminary univariate analyses do not show a clear indication of disparities (the largest difference is less than 2.0 percentage points as described in 1b.4), further analyses are needed to control for the simultaneous effect of other potential factors such as age, gender, comorbidity, and hospital characteristics and to take into account the correlation/cluster effect of patients discharged from the same hospitals.	P ☐ M ☐ N ☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	2
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met? Rationale:	*2* C ☐ P ☐ M ☐ N ☐

3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. ([evaluation criteria](#))	Eval Rating

3a. Meaningful, Understandable, and Useful Information
 	
3a.1 Current Use: In use
 	
3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*):
Hospital Inpatient Quality Reporting Program:
·
    http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
·   http://www.hospitalcompare.hhs.gov/
 	
3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years*):
Hospital Inpatient Quality Reporting Program (Measures can be used by individual hospitals for internal quality improvement):
·
    http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
·   http://www.hospitalcompare.hhs.gov/
Additionally, the Joint Commission also uses this measure for accreditation.
 	
Testing of Interpretability   (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample (*description of data/sample and size*): Unknown. [Feedback on the Hospital Compare website (used for public reporting) is collected through another contractor.]
 	
3a.5 Methods (*e.g., focus group, survey, QI project*):
Voluntary electronic survey by visitors to website.
 	
3a.6 Results (*qualitative and/or quantitative results and conclusions*):
Not available.
	
	3a
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	P ☐
	M ☐
	N ☐

3b/3c. Relation to other NQF-endorsed measures	

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3b.1 NQF # and Title of similar or related measures: NQF #0092: Aspirin at Arrival of AMI	
(for NQF staff use) Notes on similar/related <u>endorsed</u> or submitted measures:	
3b. Harmonization If this measure is related to measure(s) already <u>endorsed by NQF</u> (e.g., same topic, but different target population/setting/data source <u>or</u> different topic but same target population): **3b.2** Are the measure specifications harmonized? If not, why? No, this measure's specifications are not harmonized with NQF #0092 measure specifications, as the latter's measure population includes all patients, regardless of age, with an emergency department discharge diagnosis of acute myocardial infarction, and assesses the proportion of patients who received aspirin either within 24 hours before emergency department arrival or during the emergency department stay. This measure is concentrated on care of the AMI patient who is subsequently admitted for inpatient care; a completely different focus in terms of setting and care. NQF #0092 does provide for the exclusion of patients with documentation of reason(s) for taking/receiving aspirin within 24 hours before emergency department arrival or during emergency department stay, similar to this measure. Additionally, NQF #0092 includes the same ICD-9-CM codes that this measure does, but incorporates the necessary CPT codes and a "Place of service code" of 23 (which this measure does not).	**3b** C ☐ P ☐ M ☐ N ☐ NA ☐
3c. Distinctive or Additive Value **3c.1** Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures: No NQF-endorsed measures with same topic and target population. **5.1** If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality: No NQF-endorsed measures with same topic and target population.	**3c** C ☐ P ☐ M ☐ N ☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? Rationale:	**3** C ☐ P ☐ M ☐ N ☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (<u>evaluation criteria</u>)	<u>Eval Ratin g</u>
4a. Data Generated as a Byproduct of Care Processes **4a.1-2** How are the data elements that are needed to compute measure scores generated? Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C ☐ P ☐ M ☐ N ☐
4b. Electronic Sources **4b.1** Are all the data elements available electronically? (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2** If not, specify the near-term path to achieve electronic capture by most providers. Retooling work with HHS is expected to be completed in 2011.	**4b** C ☐ P ☐ M ☐ N ☐
4c. Exclusions **4c.1** Do the specified exclusions require additional data sources beyond what is required for the	**4c** C ☐ P ☐

Comment [KP23]: **3b.** The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population. (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: **3c.** Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: **4a.** For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care process during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: **4b.** The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: **4c.** Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

numerator and denominator specifications? No **4c.2** If yes, provide justification.	M ☐ N ☐ NA ☐

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.

1.   Since the time of last NQF endorsement (May 2007), the HeartCare measures team met with other topic teams within the Hospital Inpatient Quality Reporting Program (namely, children's asthma and surgical care) to examine the medication constructs being used. The measure designs at that time automatically excluded patients with a documented contraindication to a medication or reason for not giving a medication from the measure, regardless of whether the medication ended up being given. That type of design was resulting in a substantial amount of "false exclusions" from the measure. The decision was made to rearrange the measure such that patients who receive the medication would remain in the measure (i.e., be included in the numerator) when a reason for not administering the medication was documented, effective with April 1, 2009 discharges. It is believed that the number of false exclusions has significantly decreased as a result.

2.   Again, since the time of last NQF endorsement (May 2007), feedback was received from a number of providers concerning the automatic exclusion of patients transferred in from other hospitals. Responsible hospitals assess whether or not the patient received aspirin at the transferring facility, and if not, they either give the aspirin (with the first 24 hours after arrival) or document a reason for withholding the aspirin. As such, they argued they deserve credit for appropriate care of these patients. Changes were made to accommodate these types of cases, effective October 1, 2010 discharges.

3.   Because the denominator exclusion "Patients with a documented reason for no aspirin on arrival" allows for any physician/advance practice nurse/physician assistant/pharmacist-documented "other reason" for no aspirin within 24 hours of arrival to count as an exclusion, overuse of this exclusion has the potential for distorting performance rates. However, 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., how to handle documentation of a hold on aspirin in the ED or a delay in starting aspirin, what constitutes acceptable physician documentation of a reason for not prescribing aspirin). The frequency of questions pertaining to each data element are tracked by the Hospital Inpatient Quality Reporting Program QIOSC. 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 two data elements unique to this measure, Aspirin Received Within 24 Hours Before or After Hospital Arrival and Reason for No Aspirin on Arrival, amounted to 38, only 8% 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.

4d
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M ☐
N ☐

4e. Data Collection Strategy/Implementation

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:

The reordering of the "medication prescribed" and "reason for no medication" specifications done for April 1, 2009+ discharges (as described in section 4d.1) reduces abstraction burden. Abstractors no longer have to do an exhaustive search for acceptable reasons for not giving aspirin on arrival in cases where the patient

4e
C ☐
P ☐
M ☐
N ☐

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

received the aspirin, saving valuable abstraction time.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*): Varies according to data collection method (use of vendor) and type of abstractor used to collect clinical data. We have not received feedback that this measure has caused undue burden to the facilities collecting data.

4e.3 Evidence for costs:
N/A

4e.4 Business case documentation: N/A

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility?*	4

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? Rationale:	4 C☐ P☐ M☐ N☐

RECOMMENDATION

(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.	Time-limited ☐

Steering Committee: Do you recommend for endorsement? Comments:	Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 <u>Organization</u>
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Baltimore, Maryland, 21244-1850

Co.2 <u>Point of Contact</u>
Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-

Measure Developer If different from Measure Steward
Co.3 <u>Organization</u>
Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, Maryland, 21244-1850

Co.4 <u>Point of Contact</u>
Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-

Co.5 Submitter If different from Measure Steward POC
Jo, DeBuhr, RN, BSN, broncosrule@att.net, 303-457-3195-, OFMQ

Co.6 Additional organizations that sponsored/participated in measure development
The Joint Commission

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 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: Denver Health Medical Center, University of Colorado at Denver and Health Sciences Center
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
Kerri Fei: Senior Policy Analyst, Measure Development Operations, American Medical Association
Susan Fitzgerald, RN, MS: Associate Director, Science and Quality, American College of Cardiology
Gary Francis, MD: Professor of Medicine, University of Minnesota, Rep. of Heart Failure Society of America
David C. Goff, MD, PhD: Professor and Chair, Department of Epidemiology and Prevention, Division of Public Health Sciences, Wake Forest University School of Medicine
Kathleen Grady, CNS: Administrative Director, Center for Heart Failure, Bluhm Cardiovascular Institute Division of Cardiothoracic Surgery, Northwestern Memorial Hospital
Darryl Gray, MD: Medical Officer, Agency for Healthcare Research and Quality
Lee Green, MD: Professor, University of Michigan Medical School
Ed Havranek, MD: Professor of Medicine, Denver Health Medical Center, University of Colorado School of Medicine
Paul A. Heidenreich: Assistant Professor of Medicine, Associate Professor by courtesy of Health Research and Policy at the VA Palo Alto Health Care System and CHP/PCOR Fellow
Alice C. Jacobs, MD: Professor of Medicine, Director, Cardiac Cath Lab, Boston University Medical Center
Marvin Konstam, MD: Director, Cardiovascular Center, Tufts Medical Center, Rep. of Heart Failure Society of America
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
Ann [Hiniker] Loth, RN, MS, CNS: Certified Clinical Nurse Specialist, Mayo Foundation
Joseph Messer, MD, MACC: Professor of Medicine, Rush University Medical Center, Rep. of American Medical Association
Eric Peterson, MD, MPH: Professor of Medicine, Director Cardiovascular Research, Duke Clinical Research Institute, Duke University Medical Center
Martha Radford, MD: Chief Quality Officer, Professor of Medicine, New York University School of Medicine
Rose Marie Robertson, MD: Chief Science Officer, American Heart Association
John Rumsfeld, MD, PhD, FACC, FAHA: Staff Cardiologist, Cardiovascular Outcomes Researcher, Denver Veterans Affairs Medical Center
David Shahian, MD: Research Director, Center for Quality and Safety, Massachusetts General Hospital
Melanie Shahriary, RN, BSN: Associate Director, Performance Measures and Data Standards, American College of Cardiology
John Spertus, MD, MPH, FACC: Director of Cardiovascular Education and Outcomes Research, Mid America Heart Institute, University of Missouri
Samantha Tierney: Senior Policy Analyst I, American Medical Association
Gayle Whitman, PhD, RN, FAAN, FAHA: Sr Vice President, Office of Science Operations, American Heart Association
Janet Wright, MD, FACC: Senior Vice President for Science and Quality, American College of Cardiology
Contractor Staff:
Dale Bratzler, DO, MPH: CEO, Principal Clinical Coordinator, Oklahoma Foundation for Medical Quality
Jo DeBuhr, RN: Project Specialist, AMI/HF Inpatient Measures, Oklahoma Foundation for Medical Quality/Colorado Foundation for Medical Care
Chris Leber, RN: Project Specialist, AMI/HF Inpatient Measures, Oklahoma Foundation for Medical Quality/Colorado Foundation for Medical Care
CMS Staff:
Kristie Baus, MS, RN: Government Task Leader, Centers for Medicare and Medicaid Services
David Nilasena, MD: Chief Medical Officer, Region VI, Centers for Medicare and Medicaid

Ad.2 If adapted, provide name of original measure: N/A
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 1999
Ad.7 Month and Year of most recent revision: 10, 2010

Ad.8 What is your frequency for review/update of this measure? Every 6 months **Ad.9** When is the next scheduled review/update for this measure? 07, 2011
Ad.10 Copyright statement/disclaimers:
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*): 12/27/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0286   **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Aspirin at Arrival
De.2 Brief description of measure: Percentage of emergency department acute myocardial infarction (AMI) patients or chest pain patients (with Probable Cardiac Chest Pain) without aspirin contraindications who received aspirin within 24 hours before ED arrival or prior to transfer.
1.1-2 Type of Measure: Process   **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 National Priority Partners Priority Area: Safety   **De.5 IOM Quality Domain:** Timeliness   **De.6 Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** Y ☒ N ☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☒ N☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Payment incentive	C Y☒ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y☐ N☐
(for NQF staff use) Have all conditions for consideration been met? Staff Notes to Steward (*if submission returned*):	Met Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*): Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:		
Steering Committee Reviewer Name:		
1. IMPORTANCE TO MEASURE AND REPORT		
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Ratin g**	
(for NQF staff use) Specific NPP goal:		
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality **1a.2** **1a.3 Summary of Evidence of High Impact:** The early use of aspirin in patients with AMI results in a significant reduction in adverse events and subsequent mortality. The benefits of aspirin therapy on mortality are comparable to fibrinolytic therapy. The combination of aspirin and fibrinolytics provides additive benefits for patients with ST-segment elevation myocardial infarction (ISIS-2, 1988). Aspirin is also effective in patients with non-ST-segment elevation myocardial infarction (Theroux, 1988 and RISC Group, 1990). National guidelines strongly recommend early aspirin for patients hospitalized with AMI (Antman, 2004 and Anderson, 2007). **1a.4 Citations for Evidence of High Impact:** • Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, American College of Physicians, Society for Academic Emergency Medicine, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2007;50:e1-157. • Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM,	1a C☐ P☐ M☐ N☐	

> **Comment [KP1]:** 1a. The measure focus addresses:
●a specific national health goal/priority identified by NQF's National Priorities Partners; OR
●a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
• Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.
• Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Lancet. 1988 Aug 13;2(8607):349-60.
• Risk of myocardial infarction and death during treatment with low dose aspirin and intravenous heparin in men with unstable coronary artery disease. The RISC Group. Lancet 1990; 336(8719):827-30.
• Theroux P, Ouimet H, McCans J et al. Aspirin, heparin, or both to treat acute unstable angina. N Engl J Med 1988; 319:1105-11.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Aspirin therapy is an early first line target of care with links to improved outcomes and reduction in mortality.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
After trending quarterly data for both national performance and benchmark performance, from Q4-08 to Q1-10, we have seen the following results: the measure has shown a slight reduction in the small gap between the national rate and the benchmark rate since Q4-08. National rate: 95.4 Top 10% represented by benchmark results: 88 hospitals submitted 4,090 cases. Benchmark Rate: 99.8

1b.3 Citations for data on performance gap:
Q1 2010 Analysis Provider Level
2,571 hospitals submitted 40,564 eligible cases.
Min Rate 0
Max Rate 100
10th percentile 84.62
25th percentile 94.12
Median 100
75th percentile 100
90th percentile 100

1b.4 Summary of Data on disparities by population group:
N/A

1b.5 Citations for data on Disparities:
Q1 2010
2,571 hospitals submitted 40,564 eligible cases.

1b
C ☐
P ☐
M ☐
N ☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*): Target performance rates are 100 percent for improved outcomes.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*):
The early use of aspirin in patients with AMI results in a significant reduction in adverse events and subsequent mortality. The benefits of aspirin therapy on mortality are comparable to fibrinolytic therapy.

1c
C ☐
P ☐
M ☐
N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   3

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status - patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., ... [1]

The combination of aspirin and fibrinolytics provides additive benefits for patients with ST-segment elevation myocardial infarction (ISIS-2, 1988). Aspirin is also effective in patients with non-ST-segment elevation myocardial infarction (Theroux, 1988 and RISC Group, 1990). National guidelines strongly recommend early aspirin for patients hospitalized with AMI (Antman, 2004 and Anderson, 2007).

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*):
A ABC Scale ACC/AHA

1c.6 Method for rating evidence: ABC Scale

1c.7 Summary of Controversy/Contradictory Evidence: N/A

1c.8 Citations for Evidence (*other than guidelines*): • Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, American College of Physicians, Society for Academic Emergency Medicine, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2007;50:e1-157.
•   Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.
•   Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Lancet. 1988 Aug 13;2(8607):349-60.
•   Risk of myocardial infarction and death during treatment with low dose aspirin and intravenous heparin in men with unstable coronary artery disease. The RISC Group. Lancet 1990; 336(8719):827-30.
•   Theroux P, Ouimet H, McCans J et al. Aspirin, heparin, or both to treat acute unstable angina. N Engl J Med 1988; 319:1105-11.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
"In a dose of 162 mg or more, aspirin produces a rapid clinical antithrombotic effect caused by immediate and near-total inhibition of thromboxane A2 production. Aspirin now forms part of the early management of all patients with suspected STEMI and should be given promptly, and certainly within the first 24 hours, at a dose between 162 and 325 mg and continued indefinitely at a daily dose of 75 to 162 mg." Page 597

1c.10 Clinical Practice Guideline Citation: Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
1c.11 National Guideline Clearinghouse or other URL: N/A

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
A ABC Scale ACC/AHA

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*):
ABC Scale
•   Level A (randomized controlled trial/ meta-analysis):
High quality randomized controlled trial that considers all important outcomes. High-quality meta-analysis (quantitative systematic review) using comprehensive search strategies.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A** - The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B** - The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C** - The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D** - The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I** - The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

• Level B (other evidence):
A well-designed, nonrandomized clinical trial. A nonquantitative systematic review with appropriate search strategies and well-substantiated conclusions. Includes lower quality randomized controlled trials, clinical cohort studies, and case-controlled studies with nonbiased selection of study participants and consistent findings. Other evidence, such as high-quality, historical, uncontrolled studies, or well-designed epidemiologic studies with compelling findings, is also included.
• Level C (consensus/expert opinion):
Consensus viewpoint or expert opinion. Expert opinion is sometimes the best evidence available.

1c.14 Rationale for using this guideline over others:
ACC/AHA Strength of Evidence and Meta Analysis.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	1
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? Rationale:	1 Y☐ N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, <u>as specified</u>, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (<u>evaluation criteria</u>)	<u>Eval Ratin g</u>

2a. MEASURE SPECIFICATIONS	

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*):
Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain) who received aspirin within 24 hours before ED arrival or prior to transfer

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
During the measurement period.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Patients with:
• An E/M Code for emergency department encounter as defined in Appendix A, Table 1.0, and
• Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
• An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1 or an ICD-9-CM Principal or Other Diagnosis Codes for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a with Probable Cardiac Chest Pain and
• Patients with Aspirin Received

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*):
Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain) without aspirin contraindications

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 18 years of age and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):

2a-spec s
C☐
P☐
M☐
N☐

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

During the measurement period.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
Patients with:
• An E/M Code for emergency department encounter as defined in Appendix A, Table 1.0, and
• Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
• An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1 or an ICD-9-CM Principal or Other Diagnosis Codes for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a with Probable Cardiac Chest Pain

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*): Excluded Populations:
• Patients less than 18 years of age
• Patients with a documented Reason for No Aspirin on Arrival

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
Specifications available at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
Specifications available at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
Specifications available at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):
N/A

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Sampling Approaches
As previously stated in this section, hospitals have the option to sample from their population, or submit their entire population. Hospitals that choose to sample must ensure that the sampled data represent their outpatient population by using either the simple random sampling or systematic random sampling method and that the sampling techniques are applied consistently within a quarter. For example, quarterly samples for a sampling population must use consistent sampling techniques across the quarterly submission period.

• Simple random sampling - selecting a sample size (n) from a population of size (N) in such a way that every case has the same chance of being selected.
• Systematic random sampling - selecting every kth record from a population of size (N) in such a way that a sample size of n is obtained, where k = N/n rounded to the lower digit. The first sample record (i.e., the starting point) must be randomly selected before taking every kth record. This is a two-step process:

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

a)   Randomly select the starting point by choosing a number between one and k using a table of random numbers or a computer-generated random number; and
b)   Then select every kth record thereafter until the selection of the sample size is completed.

Each hospital is ultimately responsible that the sampling techniques applied for their hospital adhere to the sampling requirements outlined in this manual. Performance measurement systems are responsible for ensuring that the sampling techniques are applied consistently across their client hospitals.
Monthly Sampling Guidelines
It is important to point out that if a hospital elects to use the monthly sampling guidelines, the hospital is still required to meet the minimum quarterly sampling requirements. A hospital may choose to use a larger sample size than is required. Hospitals whose population size is less than the minimum number of cases per quarter for the measure set cannot sample (i.e., the entire population of cases must be selected). Given the potential for substantial variation in monthly population sizes, the monthly sample sizes should be based on the known or anticipated quarterly population size. When necessary, appropriate oversampling should be employed to ensure that the hospital meets the minimum quarterly sample size requirements. Refer to Table 3 below for guidelines in determining the number of cases that need to be sampled for each population per month per hospital based on the quarterly population size.

Table 3: Sample Size Guidelines per Month per Hospital

Population per Quarter	Monthly Sample Size
= 80	use all cases
81-100	27
101-125	32
126-150	37
151-175	41
176-200	44
201-225	48
226-250	51
251-275	54
276-300	57
301-325	59
326-350	62
351-75	64
376-400	66
401-425	68
426-450	70
451-500	73
501-600	79
601-700	83
701-800	87
801-900	90
901-1,000	93
1,001-2,000	108
2,001-3,000	114
3,001-4,000	117
4,001-5,000	119
5,001-10,000	124
10,001-20,000	126

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
N/A

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment: URL

http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289
981244

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested***)**
Hospital, Ambulatory Care: Emergency Dept, Ambulatory Care: Hospital Outpatient

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample (*description of data/sample and size*): Currently undergoing validation through the CMS Clinical Data Abstraction Center.

2b.2 Analytic Method (*type of reliability & rationale, method for testing*):
N/A

2b.3 Testing Results (*reliability statistics, assessment of adequacy in the context of norms for the test conducted*):
N/A

2b
C ☐
P ☐
M ☐
N ☐

2c. Validity testing

2c.1 Data/sample (*description of data/sample and size*): Currently undergoihg validation through the CMS CLinical Data Abstraction Center

2c.2 Analytic Method (*type of validity & rationale, method for testing*):
N/A

2c.3 Testing Results (*statistical results, assessment of adequacy in the context of norms for the test conducted*):
N/A

2c
C ☐
P ☐
M ☐
N ☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
N/A

2d.2 Citations for Evidence:
N/A

2d.3 Data/sample (*description of data/sample and size*): N/A

2d.4 Analytic Method (*type analysis & rationale*):
N/A

2d.5 Testing Results (*e.g., frequency, variability, sensitivity analyses*):
N/A

2d
C ☐
P ☐
M ☐
N ☐
NA ☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample (*description of data/sample and size*): N/A

2e.2 Analytic Method (*type of risk adjustment, analysis, & rationale*):
N/A

2e
C ☐
P ☐
M ☐
N ☐
NA ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   8

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ... [2]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outc ... [3]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and wc ... [4]

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

2f. Identification of Meaningful Differences in Performance	
2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: N/A	
2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*: N/A	
2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: Q1 2010 Analysis Provider Level 2,571 hospitals submitted 40,564 eligible cases. Min Rate 0 Max Rate 100 10th percentile 84.62 25th percentile 94.12 Median 100 75th percentile 100 90th percentile 100	**2f** C ☐ P ☐ M ☐ N ☐

2g. Comparability of Multiple Data Sources/Methods	
2g.1 Data/sample *(description of data/sample and size)*: N/A	**2g** C ☐ P ☐ M ☐ N ☐ NA ☐
2g.2 Analytic Method *(type of analysis & rationale)*: N/A	
2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*: N/A	

2h. Disparities in Care	**2h** C ☐ P ☐ M ☐ N ☐ NA ☐
2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: N/A	
2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: N/A	

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met? **Rationale:**	*2* C ☐ P ☐ M ☐ N ☐

3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information	**3a** C ☐ P ☐
3a.1 Current Use: In use	

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): CMS Hospital Outpatient Department Quality Data Reporting Proogram http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1191255879384 **3a.3 If used in other programs/initiatives** (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years*): N/A **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** (*description of data/sample and size*): N/A **3a.5 Methods** (*e.g., focus group, survey, QI project*): N/A **3a.6 Results** (*qualitative and/or quantitative results and conclusions*): N/A	M☐ N☐
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:** NQF # 132 Aspirin at Arrival for Acute Myocardial Infarction (AMI)	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source *or* different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** Yes	3b C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** Measure is applicable to the Outpatient setting. **5.1 If this measure is similar to measure(s) already endorsed by NQF** (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality: Measure is applicable to the Outpatient setting.	3c C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	3
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	3 C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?**	4a C☐ P☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   10

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	M ☐ N ☐

4b. Electronic Sources

4b.1 Are all the data elements available electronically? (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*)
No

4b.2 If not, specify the near-term path to achieve electronic capture by most providers.
NQF #132 is currently undergoing electronic retooling. It is expected the retooling will be applicable to NQF measure 286.

4b
C ☐
P ☐
M ☐
N ☐

4c. Exclusions

4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?
No

4c.2 If yes, provide justification.

4c
C ☐
P ☐
M ☐
N ☐
NA ☐

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.
Updates to data elements to provide clarification in abstraction and updates to selected references.

4d
C ☐
P ☐
M ☐
N ☐

4e. Data Collection Strategy/Implementation

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
Updates to data elements to provide clarification in abstraction and updates to selected references.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*):
N/A

4e.3 Evidence for costs:
N/A

4e.4 Business case documentation: N/A

4e
C ☐
P ☐
M ☐
N ☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	4
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? Rationale:	4 C ☐ P ☐ M ☐ N ☐

RECOMMENDATION

(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.	Time-limited ☐
Steering Committee: Do you recommend for endorsement? Comments:	Y ☐ N ☐ A ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   11

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 <u>Organization</u>
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.2 <u>Point of Contact</u>
Wanda, Govan-Jenkins, MS, MBA, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-

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Measure Developer If different from Measure Steward
Co.3 <u>Organization</u>
Oklahoma Foundation for Medical Quality, 14000 Quail Springs Parkway, Suite 400, Oklahoma City, Oklahoma, 73134-2600

Co.4 <u>Point of Contact</u>
Wanda, Govan-Jenkins, MS, MBA, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-

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Co.5 Submitter If different from Measure Steward POC
Rebecca, Jones, MSN, RN, rjones@ofmq.com, 405-840-2891-342, Oklahoma Foundation for Medical Quality

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Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
N/A

Ad.2 If adapted, provide name of original measure: N/A
Ad.3-5 If adapted, provide original specifications URL or attachment

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Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 2008
Ad.7 Month and Year of most recent revision: 07, 2010
Ad.8 What is your frequency for review/update of this measure? Bi-annual
Ad.9 When is the next scheduled review/update for this measure? 01, 2011

Ad.10 Copyright statement/disclaimers: N/A

Ad.11 -13 Additional Information web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=119628998124 4

Date of Submission (*MM/DD/YY*): 12/07/2010

4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

2d. Clinically necessary measure exclusions are identified and must be:
• supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; AND
• a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; AND
• precisely defined and specified:
  – if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

2e. For outcome measures and other measures (e.g., resource use) when indicated:
• an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;Error! Bookmark not defined. OR
rationale/data support no risk adjustment.

13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction and Hospital Outpatient Chest Pain

Measure ID#: OP-4

Outpatient Setting: Emergency Department

Performance Measure Name: Aspirin at Arrival

Description: Emergency Department acute myocardial infarction (AMI) patients or chest pain patients (with *Probable Cardiac Chest Pain*) who received aspirin within 24 hours before ED arrival or prior to transfer.

Rationale: The early use of aspirin in patients with AMI results in a significant reduction in adverse events and subsequent mortality. The benefits of aspirin therapy on mortality are comparable to fibrinolytic therapy. The combination of aspirin and fibrinolytics provides additive benefits for patients with ST-segment elevation myocardial infarction (ISIS-2, 1988). Aspirin is also effective in patients with non-ST-segment elevation myocardial infarction (Theroux, 1988 and RISC Group, 1990). National guidelines strongly recommend early aspirin for patients hospitalized with AMI (Antman, 2004 and Anderson, 2007).

Type of Measure: Process

Improvement Noted As: An increase in the rate

Numerator Statement: Emergency Department AMI or Chest Pain patients (with *Probable Cardiac Chest Pain*) who received aspirin within 24 hours before ED arrival or prior to transfer.

> **Included Populations:** Not Applicable

> **Excluded Populations:** None

> **Data Elements:**
> - *Aspirin Received*

Denominator Statement: Emergency Department AMI or Chest Pain patients (with *Probable Cardiac Chest Pain*)

> **Included Populations:**
> - An E/M Code for emergency department encounter as defined in Appendix A, Table 1.0, and

- Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1 or an *ICD-9-CM Principal or Other Diagnosis Codes* for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a with *Probable Cardiac Chest Pain*

Excluded Populations:
- Patients less than 18 years of age
- Patients with a documented Reason for No Aspirin on Arrival

Data Elements:
- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *ICD-9-CM Other Diagnosis Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *Outpatient Encounter Date*
- *Probable Cardiac Chest Pain*
- *Reason for No Aspirin on Arrival*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires retrospective data entry.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section. Sampling requirements apply to each distinct hospital outpatient measure set (AMI and Chest Pain).

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm
- Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). *J Am Coll Cardiol*. 2008;52:2046-99.
- Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. *Lancet*. 1988 Aug 13;2(8607):349-60.
- Risk of myocardial infarction and death during treatment with low dose aspirin and intravenous heparin in men with unstable coronary artery disease. The RISC Group. *Lancet* 1990; 336(8719):827-30.
- Theroux P, Ouimet H, McCans J et al. Aspirin, heparin, or both to treat acute unstable angina. *N Engl J Med* 1988; 319:1105-11.

OP-4: Aspirin at Arrival

Numerator: Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain) who received aspirin within 24 hours before ED arrival or prior to transfer.

Denominator: Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain).

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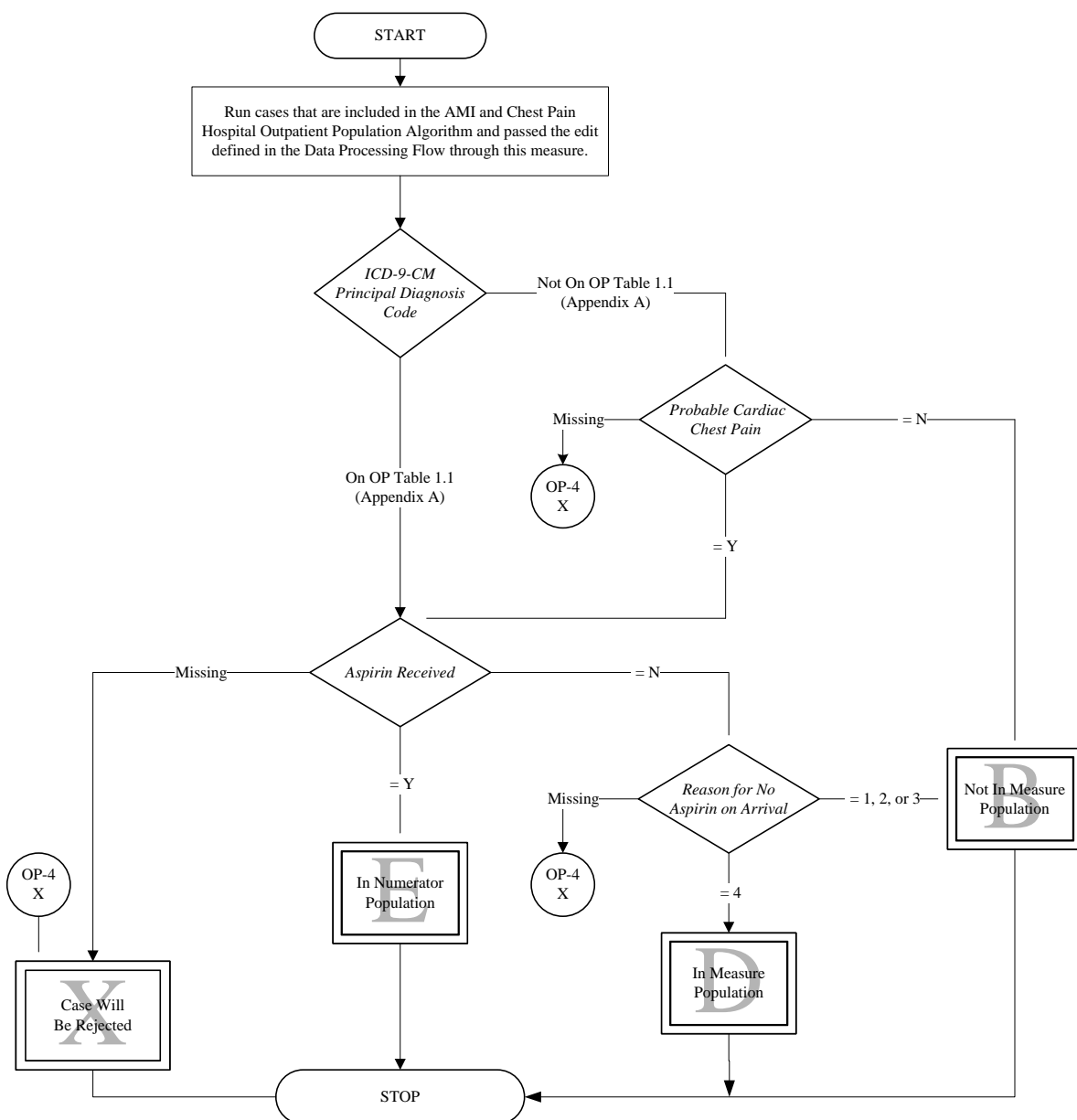
Algorithm Narrative for OP-4: Aspirin at Arrival

Numerator: Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain) who received aspirin within 24 hours before ED arrival or prior to transfer.

Denominator: Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain).

1. Start. Run cases that are included in the AMI and Chest Pain Hospital Outpatient Population Algorithm and passed the edit defined in the Data Processing Flow through this measure. Proceed to ICD-9-CM Principal Diagnosis Code.

2. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, the case will proceed to Probable Cardiac Chest Pain.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, the case will proceed to Aspirin Received.

3. Check Probable Cardiac Chest Pain

   a. If Probable Cardiac Chest Pain is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Probable Cardiac Chest Pain equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Probable Cardiac Chest Pain equals YES, the case will proceed to Aspirin Received.

4. Check Aspirin Received

   a. If Aspirin Received is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Aspirin Received equals NO, the case will proceed to Reason for No Aspirin on Arrival.

   c. If Aspirin Received equals YES, the case will proceed to a Measure Category Assignment of E. Stop processing case.

5. Check Reason for No Aspirin on Arrival

   a. If Reason for No Aspirin on Arrival is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Reason for No Aspirin on Arrival equals 1, 2, or 3, the case will proceed to a Measure Category Assignment of B. Stop processing case.

6. If Reason for No Aspirin on Arrival equals 4, the case will proceed to a Measure Category Assignment of D. Stop processing case.

HOSPITAL OUTPATIENT DEPARTMENT QUALITY MEASURES
Acute Myocardial Infarction (AMI) and Chest Pain

Set Measure ID #	Measure Short Name
OP-1[1]	Median Time to Fibrinolysis
OP-2[1]	Fibrinolytic Therapy Received Within 30 Minutes
OP-3[1]	Median Time to Transfer to Another Facility for Acute Coronary Intervention
OP-4[2]	Aspirin at Arrival
OP-5[2]	Median Time to ECG

[1]Measures only applicable to AMI Population

[2]Measures apply to both the AMI Population and Chest Pain Population

OP AMI AND CHEST PAIN GENERAL DATA ELEMENT LIST

General Data Element Name	Collected For:
Arrival Time	All Records
Birthdate	All Records
CMS Certification Number[3,4]	All Records
First Name	All Records
Hispanic Ethnicity	All Records
Last Name	All Records
National Provider Identifier[3,4]	Optional for All Records
Outpatient Encounter Date	All Records
Patient HIC#	Collected by CMS for patients with a *Payment Source* of Medicare who have a standard HIC number
Patient Identifier	All Records
Payment Source	All Records
Physician 1	Optional for All Records
Physician 2	Optional for All Records
Postal Code	All Records
Race	All Records
Sex	All Records

[3]Transmission Data Element

[4]Defined in the Transmission Data Element List within the Hospital Outpatient Measure Data Transmission section of this manual

OP AMI AND CHEST PAIN SPECIFIC DATA ELEMENT LIST

OP AMI and CP Data Element Name	Collected For:
Aspirin Received	OP-4
Discharge Date and Time	OP-3
Discharge Status	OP-1, OP-2, OP-3, OP-4, OP-5
E/M Code	OP-1, OP-2, OP-3, OP-4, OP-5
ECG	OP-5
ECG Date and Time	OP-5
Fibrinolytic Administration	OP-1, OP-2, OP-3
Fibrinolytic Administration Date and Time	OP-1, OP-2
ICD-9-CM Other Diagnosis Codes	OP-4, OP-5
ICD-9-CM Principal Diagnosis Code	OP-1, OP-2, OP-3, OP-4, OP-5
Initial ECG Interpretation	OP-1, OP-2, OP-3
Probable Cardiac Chest Pain	OP-4, OP-5
Reason for Delay in Fibrinolytic Therapy	OP-1, OP-2
Reason for No Aspirin on Arrival	OP-4
Reason for Not Administering Fibrinolytic Therapy	OP-3
Transfer for Acute Coronary Intervention	OP-3

OP-1, OP-2, OP-3, OP-4, and OP-5 Hospital Outpatient Population

The Hospital Outpatient AMI/Chest Pain measures have two distinct populations.

Acute Myocardial Infarction

The population of the OP-1 through OP-5 AMI measures is identified using 5 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-1 through OP-5 AMI Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI defined in Appendix A, OP Table 1.1.

Chest Pain

The population of the OP-4 and OP-5 Chest Pain measures is identified using 6 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Other Diagnosis Codes*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-4 and OP-5 Chest Pain Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal or Other Diagnosis Codes* for Chest Pain as defined in Appendix A, OP Table 1.1a.

Patients with an *ICD-9-CM Principal Diagnosis Code* for AMI are not eligible for the Chest Pain Hospital Outpatient Population

AMI Hospital Outpatient Population Algorithm
(OP-1 through OP-5)

Start AMI Hosptial Outpatient Measure Set Population Logic (cases eligible for OP-1 through OP-5) **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code — Not on OP Table 1.0 (Appendix A)

On OP Table 1.0 (Appendix A)

Discharge Status — = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70

= 02 or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date* minus *Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date — < 18 years

> = 18 years

ICD-9-CM Principal Diagnosis Code — Not on OP Table 1.1 (Appendix A)

On OP Table 1.1 (Appendix A)

Patient is in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Note: For information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Patient *Not* in Outpatient AMI Population

Patient is *not* in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Patient is *not* eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "Yes"

Return to *Data Processing Flow* (Data Transmission section) **End**

Algorithm Narrative for AMI Hospital Outpatient Population
(OP-1 through OP-5)

1. Start AMI Hospital Outpatient Measure Set Population logic (cases eligible for OP-1 through OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

   a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

   a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

   a. If patient age is less than 18 years, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

Chest Pain Hospital Outpatient Population Algorithm
(OP-4 and OP-5)

Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5) — **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code — Not on OP Table 1.0 (Appendix A)

On OP Table 1.0 (Appendix A)

Discharge Status — = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70

= 02, or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date* minus *Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date — <18

> = 18 years

ICD-9-CM Principal Diagnosis Code — Missing

Valid

ICD-9-CM Principal Diagnosis Code — Not on OP Table 1.1a (Appendix A) → *ICD-9-CM Other Diagnosis Code* — Not on OP Table 1.1a (Appendix A)

On OP Table 1.1a (Appendix A)

ICD-9-CM Principal Diagnosis Code — On OP Table 1.1 (Appendix A)

On OP Table 1.1a (Appendix A)

Not on OP Table 1.1 (Appendix A)

Patient Not in Outpatient Chest Pain Population

Patient *is in* the Chest Pain (OP-4 and OP-5) Hospital Outpatient Population

Patient *not in* the Chest Pain Hospital Outpatient measure Population (OP-4 and OP-5)

Note: For Information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient *is* eligible to be sampled for the Chest Pain Hospital Outpatient measures (OP-4 and OP-5)

Patient *is not* eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Set OP Population Reject Case Flag = "Yes"

Return to *Data Processing Flow* (Data Transmission section) — **End**

Algorithm Narrative for Chest Pain Hospital Outpatient Population
(OP-4 and OP-5)

1. Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

    a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

    a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

    a. If patient age is less than 18 years, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is missing, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is valid and not missing, proceed to ICD-9-CM Principal Diagnosis Code.

8. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Other Diagnosis Code.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1a, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

9. Check ICD-9-CM Other Diagnosis Code

   a. If the ICD-9-CM Other Diagnosis Code is not on Appendix A, OP Table 1.1a, Patient is Not in the Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Other Diagnosis Code is on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Principal Diagnosis Code.

10. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is Not in the Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all <mark>yellow highlighted</mark> areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

<u>Note</u>: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (<mark>yellow</mark> highlighted areas).*

Steering Committee: Complete all <mark>pink</mark> highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

<u>Evaluation ratings of the extent to which the criteria are met</u>
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0163   **NQF Project:** Cardiovascular Endorsement Maintenance 2010

MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Primary PCI received within 90 minutes of Hospital Arrival
De.2 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.*
1.1-2 Type of Measure: Process   **De.3** If included in a composite or paired with another measure, please identify composite or paired measure N/A
De.4 National Priority Partners Priority Area: Population health   **De.5 IOM Quality Domain:** Timeliness   **De.6 Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** Y☐ N☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y ☐ N ☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ▶**Purpose:** Public reporting, Internal quality improvement 　　　　　　Accountability, Payment incentive	C Y ☐ N ☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1**Testing: Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y ☐ N ☐
(for NQF staff use) **Have all conditions for consideration been met?** Staff Notes to Steward (*if submission returned*):	Met Y ☐ N ☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*): Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) <u>Specific NPP goal</u>:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality, Severity of illness, Patient/societal consequences of poor quality **1a.2** **1a.3 Summary of Evidence of High Impact:** 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. **1a.4 Citations for Evidence of High Impact:** · 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.	1a C ☐ P ☐ M ☐ N ☐
1b. Opportunity for Improvement	1b

Comment [KP1]: 1a. The measure focus addresses:
● a specific national health goal/priority identified by NQF's National Priorities Partners; OR
● a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

1b.1 Benefits (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.

C ☐
P ☐
M ☐
N ☐

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
National performance rates:
2Q09: 87.1%
3Q09: 88.2%
4Q09: 89.2%
1Q10: 90.0%

1b.3 Citations for data on performance gap:
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 Summary of Data on disparities by population group:
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 Citations for data on Disparities:
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. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population***):** The early use of primary angioplasty in patients with ST-segment myocardial infarction (STEMI) results in a significant reduction in mortality and morbidity. The earlier primary coronary intervention is provided, the more effective it is. National guidelines recommend the prompt initiation of PCI in patients presenting with STEMI.

1c.2-3. Type of Evidence: Evidence-based guideline, Randomized controlled trial, Systematic synthesis of research, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome***):**
In patients with ST-segment elevation myocardial infarction (STEMI), prompt and complete restoration of flow in the infarct artery is critical to optimizing outcomes. Early reperfusion of ischemic myocardium within the region of an occluded infarct-related artery interrupts the wave front of necrosis, reduces infarct size, preserves regional and global ventricular function, and most importantly improves survival. A meta analysis of 8140 patients enrolled in 23 RCTs found that primary PCI, when compared with fibrinolysis, resulted in 34% lower short-term mortality ,and 63% lower rates of stroke. In longer term follow-up, patients receiving PCI had 24% lower risk of death and a 51% lower risk of reinfarction. In the SHOCK trial, patients in the early revascularization group had a mortality rate of 53% at 1 year compared with 66% for the group that had initial medical stabilization followed by no or late revascularization. Time from symptom onset to reperfusion is an important predictor of patient outcome. In terms of PCI, multiple studies have reported increasing mortality rates with increasing door-to-balloon times. In one study in particular, time from symptom onset to balloon inflation significantly correlated with 1-year mortality in patients undergoing primary PCI for STEMI (relative

1c
C ☐
P ☐
M ☐
N ☐

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
o Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
o Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
o Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
o Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
o Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
o Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status - patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

risk [RR] equals 1.08 for each 30-minute delay from symptom onset to balloon inflation, p equals 0.04), after adjustment for baseline characteristics. Further analysis of randomized controlled trials suggests that mortality increases significantly with each 15-minute delay in the time between arrival and restoration of normal coronary flow. Thus, the importance of timely reperfusion in patients who undergo primary PCI is clear. Yet despite such strong evidence, studies continue to indicate that reperfusion therapy is not consistently provided in a timely manner.

1c.5 **Rating of** strength/quality of evidence (*also provide narrative description of the rating and by whom*): ACCF/AHA Task Force on Practice Guidelines, Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses, Multiple populations evaluated; Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies, Limited population risk strata evaluated.

1c.6 **Method for rating evidence:** The method of rating evidence used by the Writing Committee on the Management of Patients with ST-Elevation Myocardial Infarction in 2004 and 2007 is consistent with the methodology used by the ACCF/AHA Task Force on Practice Guidelines as described in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). Following comprehensive searching of the scientific and medical literature on AMI, with special emphasis on STEMI, the writing committee weighed the strength of evidence for or against a particular treatment or procedure. Using data available from clinical trials or registries about the usefulness/efficacy in different sub-populations, such as gender, age, history of diabetes, history of prior MI, history of heart failure, and prior aspirin use, a level of evidence rating of "A" was given when multiple (3-5) population risk strata were evaluated and there was general consistency of direction and magnitude of effect, while a rating of "B" was given when limited (2-3) population risk strata were evaluated.

1c.7 Summary of Controversy/Contradictory Evidence: There is little controversy surrounding the utility of acute reperfusion therapy for patients with STEMI who do not have contraindications to this therapy. There remains some controversy about the best approach for acute reperfusion in patients who are first evaluated at a center that is not equipped to perform primary PCI. The balance of risks and benefits according to the time necessary for transfer remains an area of active investigation. Thus, this measure addresses only the time to primary PCI among patients who were admitted and excludes transfers.

1c.8 Citations for Evidence (*other than guidelines*): · Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomised trials of more than 1000 patients. Lancet 1994;343:311-22.
·   Hochman JS, Sleeper LA, White HD, et al, for the Should We Emergently Revascularize Occluded Coronaries for Cardiogenic Shock (SHOCK) Investigators. One-year survival following early revascularization for cardiogenic shock. JAMA 2001;285:190-2.
·   Hochman JS, Sleeper LA, Webb JG, et al, for the Should We Emergently Revascularize Occluded Coronaries for Cardiogenic Shock (SHOCK) Investigators. Early revascularization in acute myocardial infarction complicated by cardiogenic shock. N Engl J Med 1999;341:625-34.
·   Berger PB, Ellis SG, Holmes DR, et al. Relationship between delay in performing direct coronary angioplasty and early clinical outcome in patients with acute myocardial infarction: results from the global use of strategies to open occluded arteries in Acute Coronary Syndromes (GUSTO-IIb) trial. Circulation 1999;100:14-20.
·   Cannon CP, Gibson CM, Lambrew CT, et al. Relationship of symptom-onset-to-balloon time and door-to-balloon time with mortality in patients undergoing angioplasty for acute myocardial infarction. JAMA 2000;283:2941-7.
·   De Luca G, Suryapranata H, Ottervanger JP, Antman EM. Time delay to treatment and mortality in primary angioplasty for acute myocardial infarction: every minute of delay counts. Circulation 2004;109:1223-5.
·   Juliard JM, Feldman LJ, Golmard JL, et al. Relation of mortality of primary angioplasty during acute myocardial infarction to door-to-Thrombolysis In Myocardial Infarction (TIMI) time. Am J Cardiol 2003;91:1401-5.
·   Nallamothu BK, Bates ER. Percutaneous coronary intervention versus fibrinolytic therapy in acute myocardial infarction: is timing (almost) everything? Am J Cardiol 2003;92:824-6.
·   Eagle KA, Goodman SG, Avezum A, Budaj A, Sullivan CM, Lopez-Sendon J, for the GRACE

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPTSF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Investigators. Practice variation and missed opportunities for reperfusion in ST-segment-elevation myocardial infarction: findings from the Global Registry of Acute Coronary Events (GRACE). Lancet 2002;359:373-7.
·   Weaver WD, Simes RJ, Betriu A, et al. Comparison of primary coronary angioplasty and intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review. JAMA 1997;278:2093-8.
·   Hasdai D, Behar S,Wallentin L, et al. A prospective survey of the characteristics, treatments and outcomes of patients with acute coronary syndromes in Europe and the Mediterranean basin. The Euro Heart Survey of Acute Coronary Syndromes (Euro Heart Survey ACS). Eur Heart J 2002;23:1190-201.
·   Huynh T, Perron S, O´Loughlin J, Joseph L, Labrecque M, Tu JV, Theroux P. Comparison of primary percutaneous coronary intervention and fibrinolytic therapy in ST-segment-elevation myocardial infarction: Bayesian hierarchical meta-analyses of randomized controlled trials and observational studies. Circulation 2009; 119(24): 3101-3109.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
[STEMI 2004]
6.3.1.6.1. Reperfusion - GENERAL CONCEPTS (p. e38)
All STEMI patients should undergo rapid evaluation for reperfusion therapy and have a reperfusion strategy implemented promptly after contact with the medical system. ["The medical system goal is to facilitate rapid recognition and treatment of patients with STEMI such that door-to-needle (or medical contact–to-needle) time for initiation of fibrinolytic therapy can be achieved within 30 minutes or that door-to-balloon (or medical contact–to-balloon) time for PCI can be kept under 90 minutes."]
6.3.1.6.4.2. Primary PCI (p. e56)
1. If immediately available, primary PCI should be performed in patients with STEMI (including true posterior MI) or MI with new or presumably new LBBB who can undergo PCI of the infarct artery within 12 hours of symptom onset, if performed in a timely fashion (balloon inflation within 90 minutes of presentation) by persons skilled in the procedure (individuals who perform more than 75 PCI procedures per year). The procedure should be supported by experienced personnel in an appropriate laboratory environment (a laboratory that performs more than 200 PCI procedures per year, of which at least 36 are primary PCI for STEMI, and has cardiac surgery capability).
2. Specific considerations:
a. Primary PCI should be performed as quickly as possible with a goal of a medical contact-to-balloon or door-to-balloon interval of within 90 minutes.
[STEMI 2007]
6.3.1.6: Reperfusion (p. 217)
STEMI patients presenting to a hospital with PCI capability should be treated with primary PCI within 90 minutes of first medical contact as a systems goal.

1c.10 Clinical Practice Guideline Citation: ·   Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
·   Antman EM, Hand M, Armstrong PW, Bates ER, Green LA, Halasyamani LK, et al. 2007 focused update of the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Group to Review New Evidence and Update the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;51:210-47.
1c.11 National Guideline Clearinghouse or other URL: http://assets.cardiosource.com/STEMI_2004.pdf, http://content.onlinejacc.org/cgi/reprint/51/2/210.pdf

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
Ratings made by ACCF/AHA Task Force on Practice Guidelines: Class I recommendation - Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

1c.13 **Method for r**ating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*):
The method of rating the strength of a recommendation used by the Writing Committees on the Management

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

of Patients with ST-Elevation Myocardial Infarction in 2004 and 2007 is consistent with the methodology used by the ACCF/AHA Task Force on Practice Guidelines as described in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). In sum, strength is assigned based on examination of evidence and careful assessment of benefit vs. risk. Both the ACCF/AHA Guidelines and the USPSTF assess evidence with respect to two parameters: 1) the magnitude of the benefit, and 2) the certainty of this benefit. However, they use different coding systems. In ascertaining magnitude of the benefit, the ACCF/AHA uses a Class I-III scale and the USPSTF uses a high-moderate-low scale. In determining the certainty of this benefit, the ACCF/AHA uses levels of evidence A-C and USPSTF uses a high-moderate-low scale.

1c.14 Rationale for using this guideline over others:
The ACC/AHA guidelines are widely accepted national guidelines that address the therapy of patients with AMI; they use an explicit and transparent methodology; and have thus served as the foundation of national quality measures.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	1
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? Rationale:	1 Y☐ N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, <u>as specified</u>, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (<u>evaluation criteria</u>)	**Eval Rating**

2a. MEASURE SPECIFICATIONS

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP).

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*):
AMI patients whose time from hospital arrival to primary Percutaneous Coronary Intervention (PCI) is 90 minutes or less.

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
From hospital arrival through 90 minutes after hospital arrival

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036:
· Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-69 through 1-74 and 1-172 through 1-176.
· Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) - pages AMI-8a-1 through AMI-8a-7.

2a.4 Denominator Statement (*Brief, text description of the denominator - 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	**2a-specs** C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

arrival; and PCI performed within 24 hours after hospital arrival.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Greater than or equal to 18 years old

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
From hospital arrival through 24 hours after hospital arrival

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
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=1228760129036:
·   Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-172 through 1-176 and 1-228 through 1-231.

2a.9 Denominator Exclusions (*Brief text 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 reason for delay documented by a physician, advanced practice nurse, or physician assistant (e.g., social, religious, initial concern or refusal, cardiopulmonary arrest, balloon pump insertion, respiratory failure requiring intubation)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=122

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

8760129036:
·   Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-20 through 1-21, 1-69 through 1-74, 1-90, 1-98 through 1-100, 1-117, 1-166, 1-172 through 1-176, 1-201, 1-204 through 1-205, 1-228 through 1-231, 1-266 through 1-267, 1-310 through 1-312, and 1-392 through 1-393.
·   Appendices | Appendix C - Medication Tables PDF – page Appendix C-9.
·   Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-8a-1 through AMI-8a-7.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=122 8760129036: Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-8a-1 through AMI-8a-7.

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):
Benchmarks are established using the ABC methodology, based on the actual performance of the top facilities. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
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%

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
Centers for Medicare & Medicaid Services (CMS) Abstraction & Reporting Tool (CART). Vendor tools also available.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=113 5267770141

2a.29-31 Data dictionary/code table web page URL or attachment: URL   Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=122 8760129036: Section 1 - Data Dictionary | Alphabetical Data Dictionary.

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national, Program: QIO

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested*)
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample (*description of data/sample and size*): CDAC (Clinical Data Abstraction Center) validation sample: 3Q09.

2b.2 Analytic Method (*type of reliability & rationale, method for testing*):
CDAC validation sampling involves SDPS selection of sample of 5 cases/quarter across all topics (AMI, HF, Pneumonia, etc.) from each hospital with a minimum of 6 discharges (across all topics) in the Clinical Data Warehouse within 4 months + 15 days following 3Q09. Hospital-abstracted data is compared to CDAC-adjudicated data.

2b.3 Testing Results (*reliability statistics, assessment of adequacy in the context of norms for the test conducted*):
Arrival Date – 96.9%
Arrival Time – 89.8%
First PCI Date – 90.7%
First PCI Time – 74.3%
Clinical Trial – 98.9%
Comfort Measures Only – 94.3%
Fibrinolytic Administration – 85.0%
Initial ECG Interpretation – 89.9%
Non-Primary PCI – 86.9%
Reason for Delay in PCI – 63.4%
Transfer From Another ED - 97.5%

2b
C ☐
P ☐
M ☐
N ☐

2c. Validity testing

2c.1 Data/sample (*description of data/sample and size*): Face validity is regularly assessed with the Technical Expert Panel responsible for reviewing and supporting the measure topic.

2c.2 Analytic Method (*type of validity & rationale, method for testing*):
Face validity

2c.3 Testing Results (*statistical results, assessment of adequacy in the context of norms for the test conducted*):
N/A

2c
C ☐
P ☐
M ☐
N ☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
The exclusions of age < 18 years, length of stay > 120 days, and enrollment in a clinical trial are common to the other measures in the AMI measure set, and to the inpatient Hospital Inpatient Quality Reporting Program measure set in general. Excluding patients who are transferred in from another hospital (including that hospital's ED) or an ambulatory surgery center allows the measure to hold accountable only those providers who serve as the initial point of contact for acute care treatment of the STEMI patient (beyond emergency medical services), where prompt care of the acute STEMI is expected to be initiated. Lastly, clinical reasons for delays in performing a PCI are justifiable in some cases. Reasons vary, from initial patient refusal or the immediate need to stabilize a patient after an arrest, to situations where a diagnostic test is warranted to rule out aortic dissection, or complications arise during the PCI, such as difficult anatomy/access, delaying

2d
C ☐
P ☐
M ☐
N ☐
NA ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

9

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category ... [1]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

balloon inflation. In these types of cases, the delay to PCI should not penalize the provider provided that the patient-centered reason for the delay is documented. All exclusions in this measure (with the exception of the length of stay and clinical trial) are concordant with the current ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction.

2d.2 Citations for Evidence:
·   Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.

2d.3 Data/sample *(description of data/sample and size)*: Clinical warehouse data: 143,732 AMI patients, 3,415 hospitals, 1Q10.

2d.4 Analytic Method *(type analysis & rationale)*:
A frequency count was conducted to calculate the percentages outlined in section 2d.5. Frequency counts are a simple, efficient way to determine the occurrence of specific values of a data element in a given data set.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Rates of Exclusion:
·   Patients enrolled in clinical trials: .5%
·   Received as a transfer either from an acute care facility where they were an inpatient or outpatient or from one distinct unit of the hospital to another distinct unit of the same hospital: 23.5%
·   Received as a transfer from the emergency/observation department of another hospital: 2.7%
·   No ST-elevation or LBBB on initial ECG: 56.6%
·   Fibrinolytic agent given prior to PCI: 0.4%
·   No PCI ICD-9-CM procedure code: 4.8%
·   PCI described as non-primary by a physician/APN/PA - .3%
·   PCI performed more than 24 hours after hospital arrival: 0.2%
·   Patients who did not receive PCI within 90 minutes and had a reason for delay documented by a physician/APN/PA: 0.9%

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: N/A

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
N/A

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

2e
C ☐
P ☐
M ☐
N ☐
NA ☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: 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

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Analysts review quarterly benchmarks established (using the ABC methodology) and trends to identify differences in performance scores and investigate the possible causes. ABC benchmarks identify superior

2f
C ☐
P ☐
M ☐
N ☐

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;Error! Bookmark not defined. OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes. If measure specifications (algorithms, data elements) are found to cause the difference in performance, they are reviewed for possible updates.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
 National performance rates:
2Q09: 87.1% (benchmark 99.6%)
3Q09: 88.2% (benchmark 99.9%)
4Q09: 89.2% (benchmark 99.7%)
1Q10: 90.0% (benchmark 99.8%)

2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: Both paper records and electronic health records can be used to collect data. Some allowances have been made as facilities incorporate EHRs in their facilities because vendors do not utilize identical data fields, but customize products according to facility need and preferences. **2g.2 Analytic Method** *(type of analysis & rationale)*: No tests have been performed on this measure to determine comparability of sources (paper medical record vs. EHR). **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: N/A	2g C ☐ P ☐ M ☐ N NA ☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Not stratified, but results according to race, sex, etc can be determined. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Since the preliminary univariate analyses suggest potential disparities, further analyses are needed to control for the simultaneous effect of other potential factors such as age, gender, comorbidity, and hospital characteristics and to take into account the correlation/cluster effect of patients discharged from the same hospitals.	2h C ☐ P ☐ M ☐ N NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*?	2
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C ☐ P ☐ M ☐ N
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (underline evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): Hospital Inpatient Quality Reporting Program: .	3a C ☐ P ☐ M ☐ N

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
·   http://www.hospitalcompare.hhs.gov/

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). <u>If not used for QI</u>, state the plans to achieve use for QI within 3 years*):
Hospital Inpatient Quality Reporting Program (Measures can be used by individual hospitals for internal quality improvement):
·
       http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
·   http://www.hospitalcompare.hhs.gov/

Testing of Interpretability   (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample (*description of data/sample and size*):   Unknown. [Feedback on the Hospital Compare website (used for public reporting) is collected through another contractor.]

3a.5 Methods (*e.g., focus group, survey, QI project*):
Voluntary electronic survey by visitors to website.

3a.6 Results (*qualitative and/or quantitative results and conclusions*):
Not available.

3b/3c. Relation to other NQF-endorsed measures

3b.1 NQF # and Title of similar or related measures:

(for NQF staff use) Notes on similar/related <u>endorsed</u> or submitted measures:

3b. Harmonization If this measure is related to measure(s) already <u>endorsed by NQF</u> (e.g., same topic, but different target population/setting/data source <u>or</u> different topic but same target population): **3b.2** Are the measure specifications harmonized? If not, why?	**3b** C ☐ P ☐ M ☐ N ☐ NA ☐
3c. Distinctive or Additive Value **3c.1** Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures: **5.1** If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality: No NQF-endorsed measures with same topic and target population.	**3c** C ☐ P ☐ M ☐ N ☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? Rationale:	**3** C ☐ P ☐ M ☐ N ☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (<u>evaluation criteria</u>)	**Eval Rating**

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

4a. Data Generated as a Byproduct of Care Processes

4a.1-2 How are the data elements that are needed to compute measure scores generated?
Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)

4a
C ☐
P ☐
M ☐
N ☐

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

4b. Electronic Sources

4b.1 Are all the data elements available electronically? (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*)
No

4b.2 If not, specify the near-term path to achieve electronic capture by most providers.
Retooling work with HHS is expected to be completed in 2011.

4b
C ☐
P ☐
M ☐
N ☐

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

4c. Exclusions

4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?
No

4c.2 If yes, provide justification.

4c
C ☐
P ☐
M ☐
N ☐
NA ☐

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.
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.

4d
C ☐
P ☐
M ☐
N ☐

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

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 QIOSC. 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.

4e. Data Collection Strategy/Implementation

> **Comment [KP30]:** 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
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.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*):
Varies according to data collection method (use of vendor) and type of abstractor used to collect clinical data. We have not received feedback that this measure has caused undue burden to the facilities collecting data.

4e.3 Evidence for costs:
N/A

4e.4 Business case documentation: N/A

	4e C ☐ P ☐ M ☐ N ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	4
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	4 C ☐ P ☐ M ☐ N ☐
RECOMMENDATION	
(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.	Time-limited ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y ☐ N ☐ A ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 <u>Organization</u>
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Baltimore, Maryland, 21244-1850

Co.2 <u>Point of Contact</u>
Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-

Measure Developer If different from Measure Steward
Co.3 <u>Organization</u>
Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, Maryland, 21244-1850

Co.4 <u>Point of Contact</u>
Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-

Co.5 Submitter If different from Measure Steward POC
Jo, DeBuhr, RN, BSN, broncosrule@att.net, 303-457-3195-, OFMQ

Co.6 Additional organizations that sponsored/participated in measure development
The Joint Commission

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 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
Kerri Fei: Senior Policy Analyst, Measure Development Operations, American Medical Association
Susan Fitzgerald, RN, MS: Associate Director, Science and Quality, American College of Cardiology
Gary Francis, MD: Professor of Medicine, University of Minnesota, Rep. of Heart Failure Society of America
David C. Goff, MD, PhD: Professor and Chair, Department of Epidemiology and Prevention, Division of Public Health Sciences, Wake Forest University School of Medicine
Kathleen Grady, CNS: Administrative Director, Center for Heart Failure, Bluhm Cardiovascular Institute Division of Cardiothoracic Surgery, Northwestern Memorial Hospital
Darryl Gray, MD: Medical Officer, Agency for Healthcare Research and Quality
Lee Green, MD: Professor, University of Michigan Medical School
Ed Havranek, MD: Professor of Medicine, Denver Health Medical Center, University of Colorado School of Medicine
Paul A. Heidenreich: Assistant Professor of Medicine, Associate Professor by courtesy of Health Research and Policy at the VA Palo Alto Health Care System and CHP/PCOR Fellow
Alice C. Jacobs, MD: Professor of Medicine, Director, Cardiac Cath Lab, Boston University Medical Center
Marvin Konstam, MD: Director, Cardiovascular Center, Tufts Medical Center, Rep. of Heart Failure Society of America
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
Ann [Hiniker] Loth, RN, MS, CNS: Certified Clinical Nurse Specialist, Mayo Foundation
Joseph Messer, MD, MACC: Professor of Medicine, Rush University Medical Center, Rep. of American Medical Association

Eric Peterson, MD, MPH: Professor of Medicine, Director Cardiovascular Research, Duke Clinical Research Institute, Duke University Medical Center
Martha Radford, MD: Chief Quality Officer, Professor of Medicine, New York University School of Medicine
Rose Marie Robertson, MD: Chief Science Officer, American Heart Association
John Rumsfeld, MD, PhD, FACC, FAHA: Staff Cardiologist, Cardiovascular Outcomes Researcher, Denver Veterans Affairs Medical Center
David Shahian, MD: Research Director, Center for Quality and Safety, Massachusetts General Hospital
Melanie Shahriary, RN, BSN: Associate Director, Performance Measures and Data Standards, American College of Cardiology
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Samantha Tierney: Senior Policy Analyst I, American Medical Association
Gayle Whitman, PhD, RN, FAAN, FAHA: Sr Vice President, Office of Science Operations, American Heart Association
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Jo DeBuhr, RN: Project Specialist, AMI/HF Inpatient Measures, Oklahoma Foundation for Medical Quality/Colorado Foundation for Medical Care
Chris Leber, RN: Project Specialist, AMI/HF Inpatient Measures, Oklahoma Foundation for Medical Quality/Colorado Foundation for Medical Care
CMS Staff:
Kristie Baus, MS, RN: Government Task Leader, Centers for Medicare and Medicaid Services
David Nilasena, MD: Chief Medical Officer, Region VI, Centers for Medicare and Medicaid

Ad.2 If adapted, provide name of original measure: N/A
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 1999
Ad.7 Month and Year of most recent revision: 10, 2010
Ad.8 What is your frequency for review/update of this measure? Every 6 months
Ad.9 When is the next scheduled review/update for this measure? 07, 2011

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment:

Date of Submission (*MM/DD/YY*): 01/17/2011

2d. Clinically necessary measure exclusions are identified and must be:

- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; AND
- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; AND
- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all <mark>yellow highlighted</mark> areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (<mark>yellow</mark> highlighted areas).*

Steering Committee: Complete all <mark>pink</mark> highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0164   **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Fibrinolytic Therapy received within 30 minutes of hospital arrival
De.2 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 fibrinolytic therapy during the hospital stay and having a time from hospital arrival to fibrinolysis of 30 minutes or less.*
1.1-2 Type of Measure: Process **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 National Priority Partners Priority Area: Population health **De.5 IOM Quality Domain:** Timeliness **De.6 Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	A Y ☐ N ☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	B

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y ☐ N ☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive	C Y ☐ N ☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1**Testing: Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y ☐ N ☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*):	Met Y ☐ N ☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*): **Staff Reviewer Name(s):**	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality, Severity of illness, Patient/societal consequences of poor quality **1a.2** **1a.3 Summary of Evidence of High Impact:** 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. **1a.4 Citations for Evidence of High Impact:** · 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.	1a C ☐ P ☐ M ☐ N ☐
1b. Opportunity for Improvement	1b

Comment [KP1]: 1a. The measure focus addresses:
● a specific national health goal/priority identified by NQF's National Priorities Partners; OR
● a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Early fibrinolytic use 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. However, despite the growing understanding by providers of the importance of promptly initiating fibrinolytic therapy in their STEMI patients, only about half of STEMI patients who are given fibrinolytic therapy as primary reperfusion therapy receive it within the 30 minute window after presentation recommended by the clinical guidelines. Ongoing use of this measure will help ensure that the relatively lower performing providers have an impetus to improve their timeliness, and that the high performing providers will maintain high performance.

C ☐
P ☐
M ☐
N ☐

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
National performance rates:
2Q09: 57.7%
3Q09: 51.5%
4Q09: 53.0%
1Q10: 54.5%

1b.3 Citations for data on performance gap:
Clinical warehouse data:
2Q09: 492 AMI patients, 252 hospitals
3Q09: 408 AMI patients, 220 hospitals
4Q09: 417 AMI patients, 230 hospitals
1Q10: 422 AMI patients, 238 hospitals

1b.4 Summary of Data on disparities by population group:
At the univariate analysis level (unadjusted odds ratios) rates ranged from 33.3% for Native Americans, to 45.6% for Hispanic/Latinos, 46.5% for African-Americans, 55.7% for White/Caucasians, and 59.0% for Asians/Pacific Islanders. The difference from the lowest to the highest rates was 25.7 percentage points. The rate for Caucasians was higher than the rates for minority groups except Asians/Pacific Islanders. However, denominators for this measure were considerably smaller than the other measures in our AMI measure set. In fact, the smallest rate of 33.3% for Native Americans was based on a denominator of 3. Excluding this group tightens the rate range and decreases the difference from lowest to highest rates from 25.7 percentage points to 13.4 percentage points.

1b.5 Citations for data on Disparities:
2009 Clinical warehouse data (Total 1,807 patients with race not missing): 1,169 Caucasian patients, 157 African-American patients, 417 Hispanic patients, 61 Asian/Pacific Islander patients, and 3 Native American patients.

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population***):** Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay. National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with STEMI.

1c.2-3. Type of Evidence: Evidence-based guideline, Randomized controlled trial, Systematic synthesis of research, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome***):**
It is well established that fibrinolytic therapy provides a survival benefit for patients with STEMI based on large, well-controlled clinical trials. The mechanisms of benefit, which may have different time dependencies, include salvage of myocardium with reduced infarct size, favorable effect on infarct healing and myocardial remodeling, and reduced electrical heterogeneity and potential for life-threatening ventricular arrhythmia. An overview from 9 trials of fibrinolytic therapy (versus control) for STEMI confers an

1c
C ☐
P ☐
M ☐
N ☐

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess - evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure - evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience - evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess - evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency - demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status - patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

18% relative reduction in 35-day mortality (9.6% fibrinolysis versus 11.5% control), which corresponds to a reduction of 18 deaths per 1000 patients treated when data from all patient groups are pooled. This survival benefit is maintained over the long term (up to 10 years). The efficacy of fibrinolytic agents in treating the occlusive coronary thrombus that causes STEMI diminishes with the passage of time. The earlier therapy begins, the better the outcome. Early reperfusion of ischemic myocardium within the risk region of an occluded infarct-related artery interrupts the wave front of necrosis, reduces ultimate infarct size, preserves regional and global ventricular function, and most importantly improves survival. Prompt fibrinolytic therapy can also reduce the risk of developing cardiogenic shock.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*): ACCF/AHA Task Force on Practice Guidelines, Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses, Multiple populations evaluated; Level of Evidence B: Data derived from a single randomized trial, or nonrandomized studies, Limited population risk strata evaluated.

1c.6 Method for rating evidence: The method of rating evidence used by the Writing Committee on the Management of Patients with ST-Elevation Myocardial Infarction in 2004 is implicitly consistent with the methodology used by the ACCF/AHA Task Force on Practice Guidelines as described in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). Following comprehensive searching of the scientific and medical literature on AMI, with special emphasis on STEMI, the writing committee weighed the strength of evidence for or against a particular treatment or procedure. Using data available from clinical trials or registries about the usefulness/efficacy in different sub-populations, such as gender, age, history of diabetes, history of prior MI, history of heart failure, and prior aspirin use, a level of evidence rating of "A" was given when multiple (3-5) population risk strata were evaluated and there was general consistency of direction and magnitude of effect, while a rating of "B" was given when limited (2-3) population risk strata were evaluated.

1c.7 Summary of Controversy/Contradictory Evidence: Over the last several years, primary percutaneous coronary intervention (PCI) has become the dominant reperfusion strategy for STEMI for several reasons, including better efficacy. However, primary PCI is not universally available in the US. Thus, although the number of patients receiving fibrinolysis for STEMI may be diminishing, this does not similarly diminish the need to ensure that such patients are treated in a timely and maximally effective manner. To the extent that regionalization initiatives further increase the use of primary PCI, the ability to measure the timeliness of fibrinolysis may become more challenging as the numbers of patients in centers that provide this therapy may become inadequate to generate the appropriate precision of measurement.

1c.8 Citations for Evidence (*other than guidelines*): · Gruppo Italiano per lo Studio della Streptochinasi nell'Infarto Miocardico (GISSI). Effectiveness of intravenous thrombolytic treatment in acute myocardial infarction. Lancet 1986;1:397-402.
·   ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Randomised trial of intravenous streptokinase, oral aspirin, both, or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. Lancet 1988;2:349-60.
·   Wilcox RG, von der Lippe G, Olsson CG, Jensen G, Skene AM, Hampton JR. Trial of tissue plasminogen activator for mortality reduction in acute myocardial infarction. Anglo-Scandinavian Study of Early Thrombolysis (ASSET). Lancet 1988;2:525-30.
·   AIMS Trial Study Group. Long-term effects of intravenous anistreplase in acute myocardial infarction: final report of the AIMS study. Lancet 1990;335:427-31.
·   Lamas GA, Flaker GC, Mitchell G, et al, for the Survival and Ventricular Enlargement Investigators. Effect of infarct artery patency on prognosis after acute myocardial infarction. Circulation 1995;92:1101-9.
·   Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomised trials of more than 1000 patients. Lancet 1994;343:311-22.
·   Baigent C, Collins R, Appleby P, Parish S, Sleight P, Peto R, for the ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. ISIS-2: 10-year survival among patients with suspected acute myocardial infarction in randomised comparison of intravenous streptokinase, oral aspirin, both, or neither. BMJ 1998;316:1337-43.
·   Franzosi MG, Santoro E, De Vita C, et al, for the GISSI Investigators. Ten-year follow-up of the first megatrial testing thrombolytic therapy in patients with acute myocardial infarction: results of the Gruppo

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods /benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Italiano per lo Studio della Sopravvivenza nell'Infarto-1 study. Circulation 1998;98:2659-65.
·   Zeymer U, Tebbe U, Essen R, Haarmann W, Neuhaus KL, for the ALKK-Study Group. Influence of time to treatment on early infarct-related artery patency after different thrombolytic regimens. Am Heart J 1999;137:34-8.
·   Reimer KA, Lowe JE, Rasmussen MM, Jennings RB. The wavefront phenomenon of ischemic cell death: 1. Myocardial infarct size vs duration of coronary occlusion in dogs. Circulation 1977;56:786-94.
·   Steg PG, Bonnefoy E, Chabaud S, et al. Impact of Time to Treatment on Mortality After Prehospital Fibrinolysis or Primary Angioplasty: data from the CAPTIM randomized clinical trial. Circulation 2003;108:2851-6.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
6.2. Initial Patient Evaluation (p. e25)
1.   The delay from patient contact with the healthcare system (arrival at the ED or contact with paramedics) to initiation of fibrinolytic therapy should be less than 30 minutes.
 6.3.1.6.1. Reperfusion - GENERAL CONCEPTS (p. e38)
All STEMI patients should undergo rapid evaluation for reperfusion therapy and have a reperfusion strategy implemented promptly after contact with the medical system. ["The medical system goal is to facilitate rapid recognition and treatment of patients with STEMI such that door-to-needle (or medical contact–to-needle) time for initiation of fibrinolytic therapy can be achieved within 30 minutes or that door-to-balloon (or medical contact–to-balloon) time for PCI can be kept under 90 minutes."]

1c.10 Clinical Practice Guideline Citation: Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
1c.11 National Guideline Clearinghouse or other URL: http://assets.cardiosource.com/STEMI_2004.pdf

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
Ratings made by ACCF/AHA Task Force on Practice Guidelines: Class I recommendation - Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*):
The method of rating the strength of a recommendation used by the Writing Committee on the Management of Patients with ST-Elevation Myocardial Infarction in 2004 is implicitly consistent with the methodology used by the ACCF/AHA Task Force on Practice Guidelines as described in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). In sum, strength is assigned based on examination of evidence and careful assessment of benefit vs. risk. Both the ACCF/AHA Guidelines and the USPSTF assess evidence with respect to two parameters: 1) the magnitude of the benefit, and 2) the certainty of this benefit. However, they use different coding systems. In ascertaining magnitude of the benefit, the ACCF/AHA uses a Class I-III scale and the USPSTF uses a high-moderate-low scale. In determining the certainty of this benefit, the ACCF/AHA uses levels of evidence A-C and USPSTF uses a high-moderate-low scale.

1c.14 Rationale for using this guideline over others:
The ACC/AHA guidelines are widely accepted national guidelines that address the therapy of patients with AMI; they use an explicit and transparent methodology; and have thus served as the foundation of national quality measures.

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	1
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? Rationale:	1 Y☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES		
Extent to which the measure, <u>as specified</u>, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (<u>evaluation criteria</u>)		<u>Eval Ratin g</u>
2a. MEASURE SPECIFICATIONS		

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP).

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*):
AMI patients whose time from hospital arrival to fibrinolysis is 30 minutes or less

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
From hospital arrival through 30 minutes after hospital arrival

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036:
·   Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-69 through 1-74 and 1-167 through 1-170.
·   Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-7a-1 through AMI-7a-6.

2a.4 Denominator Statement (*Brief, text description of the denominator - 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 ST-segment elevation or LBBB on the ECG performed closest to hospital arrival; and fibrinolytic therapy within 6 hours after hospital arrival; and fibrinolytic therapy is primary reperfusion therapy

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Greater than or equal to 18 years old

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
From hospital arrival through 6 hours after hospital arrival

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
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

2a-specs
C☐
P☐
M☐
N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

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
Fibrinolytic Administration, Fibrinolytic Administration Date, Fibrinolytic Administration Time, and Initial ECG Interpretation - Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=122 8760129036:
·   Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-166 through 1-170 and 1-228 through 1-231.

2a.9 Denominator Exclusions (*Brief text 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
•Patients who did not receive fibrinolytic therapy within 30 minutes and had a reason for delay documented by a physician, advanced practice nurse, or physician assistant (e.g., social, religious, initial concern or refusal, cardiopulmonary arrest, balloon pump insertion, respiratory failure requiring intubation)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=122 8760129036:
·   Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-20 through 1-21, 1-69 through 1-74, 1-90, 1-98 through 1-100, 1-117, 1-166 through 1-170, 1-204, 1-228 through 1-231, 1-307 through 1-309, and 1-392 through 1-393.
·   Appendices | Appendix C - Medication Tables PDF – page Appendix C-9.
·   Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-7a-1 through AMI-7a-6.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=122 8760129036:
Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-7a-1 through AMI-7a-6.

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

Benchmarks are established using the ABC methodology, based on the actual performance of the top facilities. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
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%

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
Centers for Medicare & Medicaid Services (CMS) Abstraction & Reporting Tool (CART). Vendor tools also available.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1135267770141

2a.29-31 Data dictionary/code table web page URL or attachment: URL Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: Section 1 - Data Dictionary | Alphabetical Data Dictionary.

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national, Program: QIO

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested*)
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: CDAC (Clinical Data Abstraction Center) validation sample: 3Q09.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
CDAC validation sampling involves SDPS selection of sample of 5 cases/quarter across all topics (AMI, HF, Pneumonia, etc.) from each hospital with a minimum of 6 discharges (across all topics) in the Clinical Data Warehouse within 4 months + 15 days following 3Q09. Hospital-abstracted data is compared to CDAC-adjudicated data.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Arrival Date – 96.9%
Arrival Time – 89.8%
Fibrinolytic Administration Date – 100.0%
Fibrinolytic Administration Time – 100.0%

2b
C ☐
P ☐
M ☐
N ☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Clinical Trial – 98.9%
Comfort Measures Only – 94.3%
Fibrinolytic Administration – 85.0%
Initial ECG Interpretation – 89.9%
Reason for Delay in Fibrinolytic Therapy – 88.9%
Transfer From Another ED - 97.5%

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: Face validity is regularly assessed with the Technical Expert Panel responsible for reviewing and supporting the measure topic.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Face validity

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
N/A

2c
C ☐
P ☐
M ☐
N ☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
The exclusions of age < 18 years, length of stay > 120 days, and enrollment in a clinical trial are common to the other measures in the AMI measure set, and to the inpatient Hospital Inpatient Quality Reporting Program measure set in general. Excluding patients who are transferred in from another hospital (including that hospital's ED) or an ambulatory surgery center allows the measure to hold accountable only those providers who serve as the initial point of contact for acute care treatment of the STEMI patient (beyond emergency medical services), where prompt care of the acute STEMI is expected to be initiated. Lastly, delays in receiving fibrinolytic therapy are justifiable in a number of cases. Reasons vary, from initial patient refusal or the immediate need to stabilize a patient after an arrest, to situations where a diagnostic test is warranted to rule out a suspected bleed that would put the patient at a much higher risk for fibrinolysis. In these types of cases, the delay to fibrinolysis should not count against the provider if the patient-centered reason for the delay is documented. All exclusions in this measure (with the exception of the length of stay and clinical trial) are concordant with the current ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction.

2d.2 Citations for Evidence:
·   Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046–99.

2d.3 Data/sample *(description of data/sample and size)*: Clinical warehouse data: 144,157 AMI patients, 3,476 hospitals, 1Q10.

2d.4 Analytic Method *(type analysis & rationale)*:
A frequency count was conducted to calculate the percentages outlined in section 2d.5. Frequency counts are a simple, efficient way to determine the occurrence of specific values of a data element in a given data set.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Rates of Exclusion:
·   Patients enrolled in clinical trials: .5%
·   Fibrinolytic therapy given more than 6 hours after hospital arrival: 0.0%
·   Fibrinolytic therapy not given: 16.3%
·   No ST-elevation or LBBB on initial ECG: 56.6%
·   Received as a transfer either from an acute care facility where they were an inpatient or outpatient or from one distinct unit of the hospital to another distinct unit of the same hospital: 23.4%

2d
C ☐
P ☐
M ☐
N ☐
NA ☐

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
●supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
●a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
●precisely defined and specified:
−if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

·   Received as a transfer from the emergency/observation department of another hospital: 2.8%
·   Patients who did not receive fibrinolytic therapy within 30 minutes and had a reason for delay documented by a physician/advanced practice nurse/physician assistant: 0.1%

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: N/A

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
N/A

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

2e
C ☐
P ☐
M ☐
N ☐
NA ☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: Clinical warehouse data:
2Q09: 492 AMI patients, 252 hospitals
3Q09: 408 AMI patients, 220 hospitals
4Q09: 417 AMI patients, 230 hospitals
1Q10: 422 AMI patients, 238 hospitals

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Analysts review quarterly benchmarks established (using the ABC methodology) and trends to identify differences in performance scores and investigate the possible causes. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes. If measure specifications (algorithms, data elements) are found to cause the difference in performance, they are reviewed for possible updates.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
National performance rates:
2Q09: 57.7% (benchmark 96.3%)
3Q09: 51.5% (benchmark 95.5%)
4Q09: 53.0% (benchmark 100.0%)
1Q10: 54.5% (benchmark 96.1%)

2f
C ☐
P ☐
M ☐
N ☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: Both paper records and electronic health records can be used to collect data. Some allowances have been made as facilities incorporate EHRs in their facilities because vendors do not utilize identical data fields, but customize products according to facility need and preferences.

2g.2 Analytic Method *(type of analysis & rationale)*:
No tests have been performed on this measure to determine comparability of sources (paper medical record vs. EHR).

2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*:
N/A

2g
C ☐
P ☐
M ☐
N ☐
NA ☐

2h. Disparities in Care

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: Not stratified, but results according to race, sex, etc can be determined.

2h
C ☐
P ☐
M ☐

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
●an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: Since the preliminary univariate analyses suggest potential disparities, further analyses are needed to control for the simultaneous effect of other potential factors such as age, gender, comorbidity, and hospital characteristics and to take into account the correlation/cluster effect of patients discharged from the same hospitals.	N ☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	2
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	2 C ☐ P ☐ M ☐ N ☐

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. ([evaluation criteria](#))	Eval Rating

3a. Meaningful, Understandable, and Useful Information
 	
 3a.1 Current Use: In use
 	
 3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*):
 Hospital Inpatient Quality Reporting Program:
 ·
      http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
 ·   http://www.hospitalcompare.hhs.gov/
 	
 3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years*):
 Hospital Inpatient Quality Reporting Program (Measures can be used by individual hospitals for internal quality improvement):
 ·
      http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
 ·   http://www.hospitalcompare.hhs.gov/
 	
 Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
 3a.4 Data/sample (*description of data/sample and size*): Unknown. [Feedback on the Hospital Compare website (used for public reporting) is collected through another contractor.]
 	
 3a.5 Methods (*e.g., focus group, survey, QI project*):
 Voluntary electronic survey by visitors to website.
 	
 3a.6 Results (*qualitative and/or quantitative results and conclusions*):
 Not available.
	3a
	 C ☐
	 P ☐
	 M ☐
	 N ☐

3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related** [endorsed](#) **or submitted measures:**	

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for <u>both</u> public reporting (e.g., focus group, cognitive testing) <u>and</u> informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3b. Harmonization If this measure is related to measure(s) already <u>endorsed by NQF</u> (e.g., same topic, but different target population/setting/data source <u>or</u> different topic but same target population): **3b.2** Are the measure specifications harmonized? If not, why?	**3b** C ☐ P ☐ M ☐ N ☐ NA ☐
3c. Distinctive or Additive Value **3c.1** Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures: **5.1** If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality: No NQF-endorsed measures with same topic and target population.	**3c** C ☐ P ☐ M ☐ N ☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? Rationale:	**3** C ☐ P ☐ M ☐ N ☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (<u>evaluation criteria</u>)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2** How are the data elements that are needed to compute measure scores generated? Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C ☐ P ☐ M ☐ N ☐
4b. Electronic Sources **4b.1** Are all the data elements available electronically? (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2** If not, specify the near-term path to achieve electronic capture by most providers. Retooling work with HHS is expected to be completed in 2011.	**4b** C ☐ P ☐ M ☐ N ☐
4c. Exclusions **4c.1** Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications? No **4c.2** If yes, provide justification.	**4c** C ☐ P ☐ M ☐ N ☐ NA ☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1** Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results. 1. Since the time of last NQF endorsement (May 2007), feedback was received from a number of providers concerning the inclusion of any fibrinolytic administration (within the first 6 hours after hospital arrival) in this measure. Providers argued that this approach inadvertently captures a number of cases where	**4d** C ☐ P ☐ M ☐ N ☐

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

fibrinolysis was not used as the primary means for reperfusion, discordant with the clinical guidelines which underlie this measure. Although it was believed that the 6 hour timeframe in place was lucrative in terms of capturing the most appropriate fibrinolysis cases for inclusion, the decision was made to make additional revisions to supplement the 6 hour inclusion criteria, in order to better net cases with fibrinolysis as the primary reperfusion strategy (reduce the number of "false inclusions"). Abstraction guidelines were revised to exclude cases where fibrinolytic therapy was given during a PCI (e.g., facilitated PCI) or after a PCI.
2.   Feedback was also received from a number of providers concerning the documentation requirements of the Reason for Delay in Fibrinolytic Therapy 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 fibrinolysis 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 fibrinolysis - 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 smaller 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 30 mins. after hospital arrival to automatically count as an acceptable reason for why fibrinolysis may have been delayed beyond the 30 min. window, thereby excluding the case without documentation explicitly linking the reason with the delay.
3.   The denominator exclusion "Patients who did not receive fibrinolytic therapy within 30 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 being excluded when it was most appropriate for the case to fail – cases where there was a reason for delay in fibrinolysis that was not a clinical, patient-oriented reason, but rather a "system" type of reason (e.g., delay in receiving the fibrinolytic agent from the pharmacy, staffing issues). 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 fibrinolysis). The frequency of questions pertaining to each data element is tracked by the Hospital Inpatient Quality Reporting Program QIOSC. 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 three data elements unique to this measure, Fibrinolytic Administration Date, Fibrinolytic Administration Time, and Reason for Delay in Fibrinolytic Therapy, amounted to 4, only .9% 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.

4e. Data Collection Strategy/Implementation

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
Revisions made to the Reason for Delay in Fibrinolytic Therapy 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 fibrinolysis (see 4d.1, #2 above). Additionally, documentation criteria for identifying a reason for delay were

4e
C ☐
P ☐
M ☐
N ☐

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

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 Fibrinolytic Therapy 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.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*): Varies according to data collection method (use of vendor) and type of abstractor used to collect clinical data. We have not received feedback that this measure has caused undue burden to the facilities collecting data.

4e.3 Evidence for costs:
N/A

4e.4 Business case documentation: N/A

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** C ☐ P ☐ M ☐ N ☐

RECOMMENDATION	
(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.	Time-limited ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y ☐ N ☐ A ☐

CONTACT INFORMATION
Co.1 Measure Steward (Intellectual Property Owner) **Co.1** <u>Organization</u> Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Baltimore, Maryland, 21244-1850 **Co.2** <u>Point of Contact</u> Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-
Measure Developer If different from Measure Steward **Co.3** <u>Organization</u> Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, Maryland, 21244-1850 **Co.4** <u>Point of Contact</u> Kristie, Baus, RN, MS, kristie.baus@cms.hhs.gov, 410-786-8161-
Co.5 Submitter If different from Measure Steward POC Jo, DeBuhr, RN, BSN, broncosrule@att.net, 303-457-3195-, OFMQ
Co.6 Additional organizations that sponsored/participated in measure development The Joint Commission
ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development **Ad.1** 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
Kerri Fei: Senior Policy Analyst, Measure Development Operations, American Medical Association
Susan Fitzgerald, RN, MS: Associate Director, Science and Quality, American College of Cardiology
Gary Francis, MD: Professor of Medicine, University of Minnesota, Rep. of Heart Failure Society of America
David C. Goff, MD, PhD: Professor and Chair, Department of Epidemiology and Prevention, Division of Public Health Sciences, Wake Forest University School of Medicine
Kathleen Grady, CNS: Administrative Director, Center for Heart Failure, Bluhm Cardiovascular Institute Division of Cardiothoracic Surgery, Northwestern Memorial Hospital
Darryl Gray, MD: Medical Officer, Agency for Healthcare Research and Quality
Lee Green, MD: Professor, University of Michigan Medical School
Ed Havranek, MD: Professor of Medicine, Denver Health Medical Center, University of Colorado School of Medicine
Paul A. Heidenreich: Assistant Professor of Medicine, Associate Professor by courtesy of Health Research and Policy at the VA Palo Alto Health Care System and CHP/PCOR Fellow
Alice C. Jacobs, MD: Professor of Medicine, Director, Cardiac Cath Lab, Boston University Medical Center
Marvin Konstam, MD: Director, Cardiovascular Center, Tufts Medical Center, Rep. of Heart Failure Society of America
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
Ann [Hiniker] Loth, RN, MS, CNS: Certified Clinical Nurse Specialist, Mayo Foundation
Joseph Messer, MD, MACC: Professor of Medicine, Rush University Medical Center, Rep. of American Medical Association
Eric Peterson, MD, MPH: Professor of Medicine, Director Cardiovascular Research, Duke Clinical Research Institute, Duke University Medical Center
Martha Radford, MD: Chief Quality Officer, Professor of Medicine, New York University School of Medicine
Rose Marie Robertson, MD: Chief Science Officer, American Heart Association
John Rumsfeld, MD, PhD, FACC, FAHA: Staff Cardiologist, Cardiovascular Outcomes Researcher, Denver Veterans Affairs Medical Center
David Shahian, MD: Research Director, Center for Quality and Safety, Massachusetts General Hospital
Melanie Shahriary, RN, BSN: Associate Director, Performance Measures and Data Standards, American College of Cardiology
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Janet Wright, MD, FACC: Senior Vice President for Science and Quality, American College of Cardiology
Contractor Staff:
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Chris Leber, RN: Project Specialist, AMI/HF Inpatient Measures, Oklahoma Foundation for Medical Quality/Colorado Foundation for Medical Care
CMS Staff:
Kristie Baus, MS, RN: Government Task Leader, Centers for Medicare and Medicaid Services
David Nilasena, MD: Chief Medical Officer, Region VI, Centers for Medicare and Medicaid

Ad.2 If adapted, provide name of original measure: N/A
Ad.3-5 If adapted, provide original specifications URL or attachment

| Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released: 1999
Ad.7 Month and Year of most recent revision: 10, 2010
Ad.8 What is your frequency for review/update of this measure? Every 6 months
Ad.9 When is the next scheduled review/update for this measure? 07, 2011 |
| **Ad.10** Copyright statement/disclaimers: |
| **Ad.11 -13** Additional Information web page URL or attachment: |
| Date of Submission (*MM/DD/YY*): 01/17/2011 |

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all <mark>yellow highlighted</mark> areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (<mark>yellow</mark> highlighted areas).*

Steering Committee: Complete all <mark>pink</mark> highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0288   **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival
De.2 Brief description of measure*: Emergency Department acute myocardial infarction (AMI) patients receiving fibrinolytic therapy during the ED stay and having a time from ED arrival to fibrinolysis of 30 minutes or less.*
1.1-2 Type of Measure: Process   **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 National Priority Partners Priority Area: Patient and family engagement, Safety   **De.5 IOM Quality Domain:** Timeliness   **De.6 Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** Y ☐ N ☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** Y ☐

every 3 years. Yes, information provided in contact section	N ☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Payment incentive	C Y ☐ N ☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y ☐ N ☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*):	Met Y ☐ N ☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*):	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal:**	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality **1a.2** **1a.3 Summary of Evidence of High Impact:** Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists´ Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004). **1a.4 Citations for Evidence of High Impact:** • Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. • Fibrinolytic Therapy Trialists´ (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. Lancet. 1994; 343:311-22. • Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures	1a C ☐ P ☐ M ☐ N ☐

Comment [KP1]: **1a.** The measure focus addresses:
●a specific national health goal/priority identified by NQF's National Priorities Partners; OR
●a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

(Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Target is to administer drug within 30 minutes time for improved outcomes.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
After trending quarterly data for both national performance and benchmark performance, from Q4-08 to Q1-10, we have seen the following results:The measure has shown a constant gap in performance between the national rate and the benchmark rate since Q4-08. National Rates range from 51.6 through 55.1 percent.

1b.3 Citations for data on performance gap:
670 hospitals submitted 1,479 eligible cases.

1b.4 Summary of Data on disparities by population group:
N/A

1b.5 Citations for data on Disparities:
Q1 2010 Analysis Provider Level
670 hospitals submitted 1,479 eligible cases.
Min 0
10th percentile 0
25th percentile 0
Median 50
75th percentile 100
90th percentile 100
Max 100

1b
C ☐
P ☐
M ☐
N ☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*): Target median times are less than or equal to 30 minutes for improved outcomes.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*):
Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists´ Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004).

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*):
A ABC Scale

1c.6 Method for rating evidence: ABC Scale

1c.7 Summary of Controversy/Contradictory Evidence: N/A

1c.8 Citations for Evidence (*other than guidelines*): • Fibrinolytic Therapy Trialists´ (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. Lancet. 1994; 343:311-22.
•   Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of

1c
C ☐
P ☐
M ☐
N ☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure ⟨ ... [1]⟩

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve ⟨ ... [2]⟩

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system ⟨ ... [3]⟩

the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*): "The medical system goal is to facilitate rapid recognition and treatment of patients with STEMI such that door-to-needle (or medical contact-to-needle) time for initiation of fibrinolytic therapy can be achieved within 30 minutes" Page 597

1c.10 Clinical Practice Guideline Citation: : Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.

1c.11 National Guideline Clearinghouse or other URL: N/A

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
A

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*):
ABC Scale
•   Level A (randomized controlled trial/ meta-analysis):
High quality randomized controlled trial that considers all important outcomes. High-quality meta-analysis (quantitative systematic review) using comprehensive search strategies.
•   Level B (other evidence):
A well-designed, nonrandomized clinical trial. A nonquantitative systematic review with appropriate search strategies and well-substantiated conclusions. Includes lower quality randomized controlled trials, clinical cohort studies, and case-controlled studies with nonbiased selection of study participants and consistent findings. Other evidence, such as high-quality, historical, uncontrolled studies, or well-designed epidemiologic studies with compelling findings, is also included.
•   Level C (consensus/expert opinion):
Consensus viewpoint or expert opinion. Expert opinion is sometimes the best evidence available.

1c.14 Rationale for using this guideline over others:
ACC/AHA Strength of Evidence and Meta Analysis.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	1
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? Rationale:	1 Y☐ N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, <u>as specified</u>, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating

2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2** If yes, provide web page URL: 2a. Precisely Specified **2a.1** Numerator Statement (*Brief, text description of the numerator - what is being measured about the*	2a-specs C☐ P☐

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Comment [KP8]: **2a.** The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

target population, e.g. target condition, event, or outcome):
Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
During the measurement period.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Patients with:
• An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0, and
• Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
• An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1, and
• ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
• Fibrinolytic Administration as defined in the Data Dictionary

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*):
Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 18 years of age and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
During the measurement period.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
Patients with:
• An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0, and
• Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
• An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1, and
• ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
• Fibrinolytic Administration as defined in the Data Dictionary

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*): Excluded Populations:
• Patients less than 18 years of age
• Patients who did not receive Fibrinolytic Administration within 30 minutes AND had a Reason for Delay in Fibrinolytic Therapy as defined in the Data Dictionary

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
See specifications at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

M ☐
N ☐

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
See specifcations at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289
981244

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):
N/A

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Sampling Approaches
As previously stated in this section, hospitals have the option to sample from their population, or submit their entire population. Hospitals that choose to sample must ensure that the sampled data represent their outpatient population by using either the simple random sampling or systematic random sampling method and that the sampling techniques are applied consistently within a quarter. For example, quarterly samples for a sampling population must use consistent sampling techniques across the quarterly submission period.

• Simple random sampling - selecting a sample size (n) from a population of size (N) in such a way that every case has the same chance of being selected.
• Systematic random sampling - selecting every kth record from a population of size (N) in such a way that a sample size of n is obtained, where k = N/n rounded to the lower digit. The first sample record (i.e., the starting point) must be randomly selected before taking every kth record. This is a two-step process:
a) Randomly select the starting point by choosing a number between one and k using a table of random numbers or a computer-generated random number; and
b) Then select every kth record thereafter until the selection of the sample size is completed.

Each hospital is ultimately responsible that the sampling techniques applied for their hospital adhere to the sampling requirements outlined in this manual. Performance measurement systems are responsible for ensuring that the sampling techniques are applied consistently across their client hospitals.
Monthly Sampling Guidelines
It is important to point out that if a hospital elects to use the monthly sampling guidelines, the hospital is still required to meet the minimum quarterly sampling requirements. A hospital may choose to use a larger sample size than is required. Hospitals whose population size is less than the minimum number of cases per quarter for the measure set cannot sample (i.e., the entire population of cases must be selected). Given the potential for substantial variation in monthly population sizes, the monthly sample sizes should be based on the known or anticipated quarterly population size. When necessary, appropriate oversampling should be employed to ensure that the hospital meets the minimum quarterly sample size requirements. Refer to Table 3 below for guidelines in determining the number of cases that need to be sampled for each population per month per hospital based on the quarterly population size.

Table 3: Sample Size Guidelines per Month per Hospital

Population per Quarter	Monthly Sample Size
= 80	use all cases
81-100	27
101-125	32
126-150	37
151-175	41
176-200	44
201-225	48
226-250	51
251-275	54
276-300	57
301-325	59
326-350	62
351- 75	64
376-400	66

401 -425 68
426-450 70
451-500 73
501-600 79
601-700 83
701-800 87
801-900 90
901-1,000 93
1,001-2,000 108
2,001-3,000 114
3,001-4,000 117
4,001-5,000 119
5,001-10,000   124
10,001-20,000   126

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
See specifications at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested*)
Hospital, Ambulatory Care: Emergency Dept, Ambulatory Care: Hospital Outpatient

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample (*description of data/sample and size*): Currently under going validation through the CMS Clinical Data Abstraction Center

2b.2 Analytic Method (*type of reliability & rationale, method for testing*):
N/A

2b.3 Testing Results (*reliability statistics, assessment of adequacy in the context of norms for the test conducted*):
N/A

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample (*description of data/sample and size*): Currently under going validation through the CMS Clinical Data Abstraction Center

2c
C☐
P☐
M☐
N☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

2c.2 Analytic Method (*type of validity & rationale, method for testing*):
N/A

2c.3 Testing Results (*statistical results, assessment of adequacy in the context of norms for the test conducted*):
N/A

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
N/A

2d.2 Citations for Evidence:
N/A

2d.3 Data/sample (*description of data/sample and size*): N/A

2d.4 Analytic Method (*type analysis & rationale*):
N/A

2d.5 Testing Results (*e.g., frequency, variability, sensitivity analyses*):
N/A

2d	C ☐ P ☐ M ☐ N ☐ NA ☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample (*description of data/sample and size*): N/A

2e.2 Analytic Method (*type of risk adjustment, analysis, & rationale*):
N/A

2e.3 Testing Results (*risk model performance metrics*):
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

2e	C ☐ P ☐ M ☐ N ☐ NA ☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use (*description of data/sample and size*): N/A

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance
(*type of analysis & rationale*):
N/A

2f.3 Provide Measure Scores from Testing or Current Use (*description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance*):
After trending quarterly data for both national performance and benchmark performance, from Q4-08 to Q1-10, we have seen the following results: the measure has shown a constant gap in performance between the national rate and the benchmark rate since Q4-08.
Q1 2010 Analysis Provider Level
670 hospitals submitted 1,479 eligible cases.
Min 0
10th percentile 0
25th percentile 0
Median 50
75th percentile 100
90th percentile 100
Max 100

670 hospitals submitted 1,479 eligible cases. National rate: 53.5

2f	C ☐ P ☐ M ☐ N ☐

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND ... [4]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;Error! Bookmark not defined. OR ... [5]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by ra ... [6]

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically ... [7]

Top 10% represented by benchmark results: 43 hospitals submitted 191 cases. Benchmark Rate: 98.4

2g. Comparability of Multiple Data Sources/Methods **2g.1** Data/sample *(description of data/sample and size)*: N/A **2g.2** Analytic Method *(type of analysis & rationale)*: N/A **2g.3** Testing Results *(e.g., correlation statistics, comparison of rankings)*: N/A	2g C☐ P☐ M☐ N☐ NA☐

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2h. Disparities in Care **2h.1** If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: N/A **2h.2** If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: N/A	2h C☐ P☐ M☐ N☐ NA☐

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	2
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met? Rationale:	*2* C☐ P☐ M☐ N☐

3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating

3a. Meaningful, Understandable, and Useful Information **3a.1** Current Use: In use **3a.2** Use in a public reporting initiative (disclosure of performance results to the public at large) *(If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years)*: CMS Hospital Outpatient Department Quality Data Reporting Program http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1191255 879384 **3a.3** If used in other programs/initiatives *(If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years)*: N/A **Testing of Interpretability** *(Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement)* **3a.4** Data/sample *(description of data/sample and size)*: N/A **3a.5** Methods *(e.g., focus group, survey, QI project)*: N/A **3a.6** Results *(qualitative and/or quantitative results and conclusions)*: N/A	3a C☐ P☐ M☐ N☐

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3b/3c. Relation to other NQF-endorsed measures	

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

3b.1 NQF # and Title of similar or related measures:
NQF # 287 Median Time to Fibrinolysis and NQF # 164 Fibrinolytic Therapy Received Within 30 Minutes of Arrival

(for NQF staff use) Notes on similar/related endorsed **or submitted measures:**

3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** Yes.	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** Measure is applicable to the Outpatient setting, additionally the performance rate percentage is reported in addition to the median time. **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** Measure is applicable to the Outpatient setting, additionally the performance rate percentage is reported in addition to the median time.	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.** NQF #164 is currently undergoing electronic retooling. It is expected the retooling will be applicable to NQF measures 288 and 287.	**4b** C☐ P☐ M☐ N☐
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences	**4d** C☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   10

Comment [KP23]: 3b. The measure specifications are harmonized with and as with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results. N/A	P ☐ M ☐ N ☐
4e. Data Collection Strategy/Implementation **4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues: Updates to data elements to provide clarification in abstraction and updates to selected references. **4e.2** Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*): N/A **4e.3** Evidence for costs: N/A **4e.4** Business case documentation: N/A	**4e** C ☐ P ☐ M ☐ N ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility?*	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility,* **met?** Rationale:	**4** C ☐ P ☐ M ☐ N ☐
RECOMMENDATION	
(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.	Time-limited ☐
Steering Committee: Do you recommend for endorsement? Comments:	Y ☐ N ☐ A ☐
CONTACT INFORMATION	
Co.1 Measure Steward (Intellectual Property Owner) **Co.1** <u>Organization</u> Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850 **Co.2** <u>Point of Contact</u> Wanda, Govan-Jenkins, MS, MBS, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-	
Measure Developer If different from Measure Steward **Co.3** <u>Organization</u> Oklahoma Foundation for Medical Quality, 14000 Quail Springs Parkway, Suite 400, Oklahoma City, Oklahoma, 73134-2600 **Co.4** <u>Point of Contact</u> Wanda, Govan-Jenkins, MS, MBS, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-	
Co.5 Submitter If different from Measure Steward POC Rebecca, Jones, MSN, RN, rjones@ofmq.com, 405-840-2891-342, Oklahoma Foundation for Medical Quality	
Co.6 Additional organizations that sponsored/participated in measure development	

> **Comment [KP30]:** 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   11

ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development **Ad.1** Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development. N/A
Ad.2 If adapted, provide name of original measure: N/A **Ad.3-5** If adapted, provide original specifications URL or attachment
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6** Year the measure was first released: 2008 **Ad.7** Month and Year of most recent revision: 07, 2010 **Ad.8** What is your frequency for review/update of this measure? Bi-annual **Ad.9** When is the next scheduled review/update for this measure? 01, 2011
Ad.10 Copyright statement/disclaimers: N/A
Ad.11 -13 Additional Information web page URL or attachment: URL http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=11962899812 44
Date of Submission (*MM/DD/YY*): 12/07/2010

1c. The measure focus is:
- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR
- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - o Intermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - o Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - o Structure - evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - o Patient experience - evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - o Access - evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - o Efficiency - demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status - patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

2d. Clinically necessary measure exclusions are identified and must be:
- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; AND
- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; AND
- precisely defined and specified:
  - – if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

rationale/data support no risk adjustment.

13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women).   It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction

Measure ID#: OP-2

Outpatient Setting: Emergency Department

Performance Measure Name: Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

Description: Emergency Department acute myocardial infarction (AMI) patients with ST-segment elevation or LBBB on the ECG closest to arrival time receiving fibrinolytic therapy during the ED stay and having a time from ED arrival to fibrinolysis of 30 minutes or less.

Rationale: Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004).

Type of Measure: Process

Improvement Noted as: An increase in the rate

Numerator Statement: Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

    Included Populations: Not Applicable

    Excluded Populations: None

    Data Elements:
- *Arrival Time*
- *Fibrinolytic Administration*
- *Fibrinolytic Administration Date and Time*
- *Outpatient Encounter Date*

Denominator Statement: Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.

    Included Populations:
- An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and

- Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1, and
- ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
- *Fibrinolytic Administration* as defined in the Data Dictionary

Excluded Populations:
- Patients less than 18 years of age
- Patients who did not receive *Fibrinolytic Administration* within 30 minutes AND had a *Reason for Delay in Fibrinolytic Therapy* as defined in the Data Dictionary

Data Elements:
- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial ECG Interpretation*
- *Reason for Delay in Fibrinolytic Therapy*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires retrospective data entry.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: The measure rate for fibrinolytic agent received within 30 minutes of emergency department arrival should be analyzed in conjunction with the ED median time to fibrinolysis measure (OP-1). These measures, used together, will assist in understanding the number of AMI patients that are receiving fibrinolysis within 30 minutes of emergency department arrival and will identify the emergency department's median time to fibrinolysis and potential opportunities for improvement to increase the rate of patients receiving fibrinolysis in 30 minutes or less.

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported as: Aggregate rate generated from count data reported as a proportion

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at: http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm
- Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. *Lancet.* 1994; 343:311-22.
  Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). *J Am Coll Cardiol.* 2008;52-2046-99.

OP-2: ED Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

Numerator: Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less

Denominator: Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.

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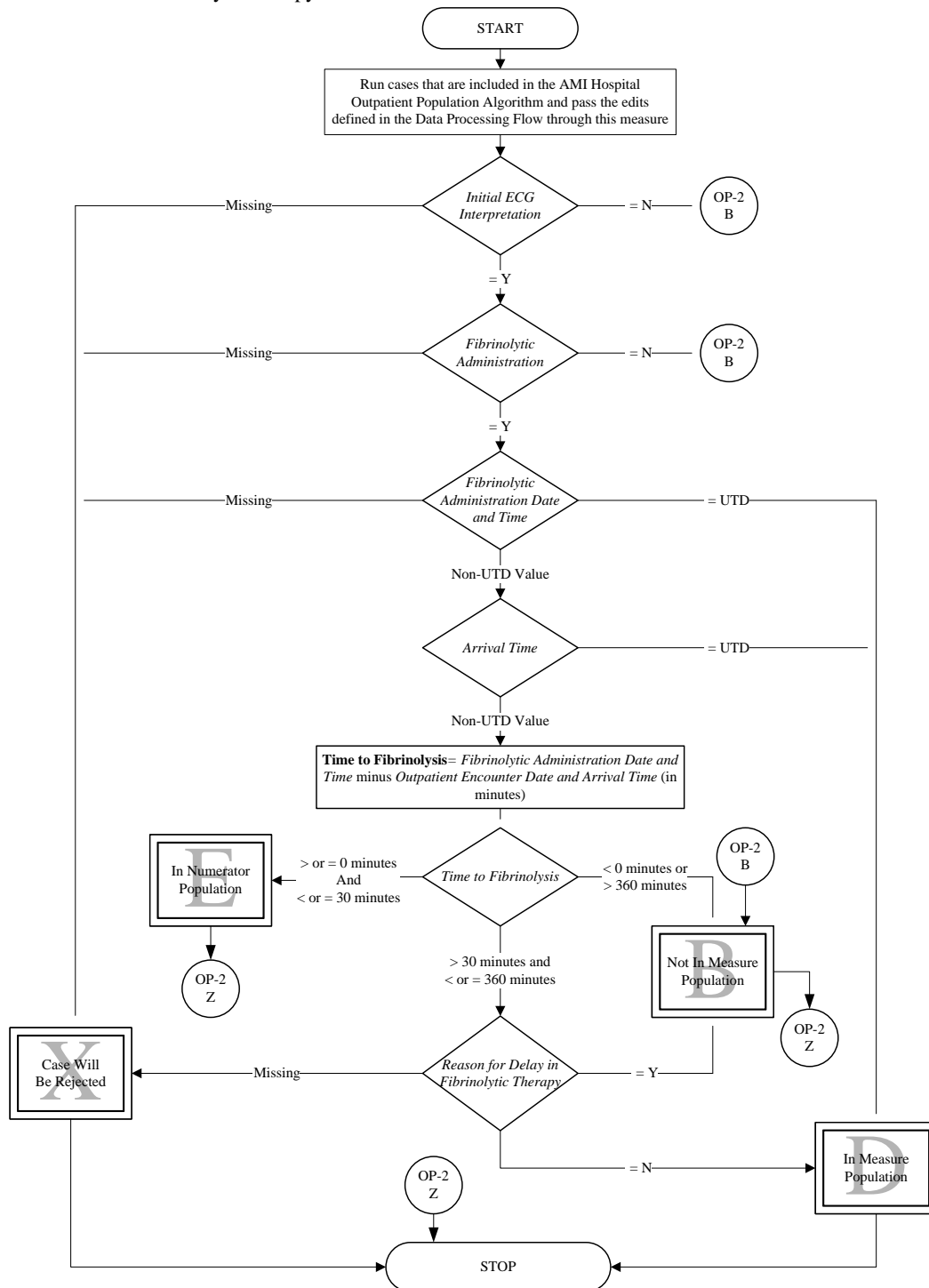
Algorithm Narrative for OP-2:
ED Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

Numerator: Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

Denominator: Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.

1. Start. Run all cases that are included in the AMI Hospital Outpatient Population Algorithm and pass the edits defined in the Data Processing Flow through this measure. Proceed to Initial ECG Interpretation.

2. Check Initial ECG Interpretation

    a. If Initial ECG Interpretation is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

    b. If Initial ECG Interpretation equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

    c. If Initial ECG Interpretation equals YES, the case will proceed to Fibrinolytic Administration.

3. Check Fibrinolytic Administration

    a. If Fibrinolytic Administration is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

    b. If Fibrinolytic Administration equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

    c. If Fibrinolytic Administration equals YES, the case will proceed to Fibrinolytic Administration Date and Time.

4. Check Fibrinolytic Administration Date and Time

    a. If Fibrinolytic Administration Date and Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

    b. If Fibrinolytic Administration Date and Time equals UTD, the case will proceed to a Measure Category Assignment of D. Stop processing case.

    c. If Fibrinolytic Administration equals Non-UTD Value, the case will proceed to Arrival Time.

5. Check Arrival Time

   a. If Arrival Time equals UTD, the case will proceed to a Measure Category Assignment of D. Stop processing case.

   b. If Arrival Time equals Non-UTD Value, the case will proceed to Time to Fibrinolysis calculation.

6. Calculate the Time to Fibrinolysis. Time in minutes is equal to the Fibrinolytic Administration Date and Time (in minutes) minus the Outpatient Encounter Date and Arrival Time (in minutes).

7. Check the Time to Fibrinolysis

   a. If Time to Fibrinolysis is greater than or equal to 0 minutes and less than or equal to 30 minutes, the case will proceed to a Measure Category Assignment of E. Stop processing case.

   b. If Time to Fibrinolysis is less than 0 minutes or greater than 360 minutes, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Time to Fibrinolysis is greater than 30 minutes and less than or equal to 360 minutes, the case will proceed to Reason for Delay in Fibrinolytic Therapy.

8. Check Reason for Delay in Fibrinolytic Therapy.

   a. If Reason for Delay in Fibrinolytic Therapy is missing, the case will proceed to a Measure Category Assignment of X and the case will be rejected. Stop processing case.

   b. If Reason for Delay in Fibrinolytic Therapy equals YES, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Reason for Delay in Fibrinolytic Therapy equals NO, the case will proceed to a Measure Category Assignment of D. Stop processing case.

HOSPITAL OUTPATIENT DEPARTMENT QUALITY MEASURES
Acute Myocardial Infarction (AMI) and Chest Pain

Set Measure ID #	Measure Short Name
OP-1[1]	Median Time to Fibrinolysis
OP-2[1]	Fibrinolytic Therapy Received Within 30 Minutes
OP-3[1]	Median Time to Transfer to Another Facility for Acute Coronary Intervention
OP-4[2]	Aspirin at Arrival
OP-5[2]	Median Time to ECG

[1]Measures only applicable to AMI Population

[2]Measures apply to both the AMI Population and Chest Pain Population

OP AMI AND CHEST PAIN GENERAL DATA ELEMENT LIST

General Data Element Name	Collected For:
Arrival Time	All Records
Birthdate	All Records
CMS Certification Number[3,4]	All Records
First Name	All Records
Hispanic Ethnicity	All Records
Last Name	All Records
National Provider Identifier[3,4]	Optional for All Records
Outpatient Encounter Date	All Records
Patient HIC#	Collected by CMS for patients with a *Payment Source* of Medicare who have a standard HIC number
Patient Identifier	All Records
Payment Source	All Records
Physician 1	Optional for All Records
Physician 2	Optional for All Records
Postal Code	All Records
Race	All Records
Sex	All Records

[3]Transmission Data Element

[4]Defined in the Transmission Data Element List within the Hospital Outpatient Measure Data Transmission section of this manual

OP AMI AND CHEST PAIN SPECIFIC DATA ELEMENT LIST

OP AMI and CP Data Element Name	Collected For:
Aspirin Received	OP-4
Discharge Date and Time	OP-3
Discharge Status	OP-1, OP-2, OP-3, OP-4, OP-5
E/M Code	OP-1, OP-2, OP-3, OP-4, OP-5
ECG	OP-5
ECG Date and Time	OP-5
Fibrinolytic Administration	OP-1, OP-2, OP-3
Fibrinolytic Administration Date and Time	OP-1, OP-2
ICD-9-CM Other Diagnosis Codes	OP-4, OP-5
ICD-9-CM Principal Diagnosis Code	OP-1, OP-2, OP-3, OP-4, OP-5
Initial ECG Interpretation	OP-1, OP-2, OP-3
Probable Cardiac Chest Pain	OP-4, OP-5
Reason for Delay in Fibrinolytic Therapy	OP-1, OP-2
Reason for No Aspirin on Arrival	OP-4
Reason for Not Administering Fibrinolytic Therapy	OP-3
Transfer for Acute Coronary Intervention	OP-3

OP-1, OP-2, OP-3, OP-4, and OP-5 Hospital Outpatient Population

The Hospital Outpatient AMI/Chest Pain measures have two distinct populations.

Acute Myocardial Infarction

The population of the OP-1 through OP-5 AMI measures is identified using 5 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-1 through OP-5 AMI Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI defined in Appendix A, OP Table 1.1.

Chest Pain

The population of the OP-4 and OP-5 Chest Pain measures is identified using 6 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Other Diagnosis Codes*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-4 and OP-5 Chest Pain Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal or Other Diagnosis Codes* for Chest Pain as defined in Appendix A, OP Table 1.1a.

Patients with an *ICD-9-CM Principal Diagnosis Code* for AMI are not eligible for the Chest Pain Hospital Outpatient Population

AMI Hospital Outpatient Population Algorithm
(OP-1 through OP-5)

Start AMI Hosptial Outpatient Measure Set Population Logic (cases eligible for OP-1 through OP-5) — **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code
- Not on OP Table 1.0 (Appendix A)
- On OP Table 1.0 (Appendix A)

Discharge Status
- = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70
- = 02 or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date* minus *Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date
- < 18 years
- > = 18 years

ICD-9-CM Principal Diagnosis Code
- Not on OP Table 1.1 (Appendix A)
- On OP Table 1.1 (Appendix A)

Note: For information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient is in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Patient *Not* in Outpatient AMI Population

Patient is *not* in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Patient is *not* eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "Yes"

Return to *Data Processing Flow* (Data Transmission section) — **End**

Specifications Manual for Hospital Outpatient Department Quality Measures
Encounter dates **07-01-11 (3Q11)** through **12-31-11 (4Q11) v.4.1**

AMI-CP-4

Algorithm Narrative for AMI Hospital Outpatient Population
(OP-1 through OP-5)

1. Start AMI Hospital Outpatient Measure Set Population logic (cases eligible for OP-1 through OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

    a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

    a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

    a. If patient age is less than 18 years, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

    a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

Chest Pain Hospital Outpatient Population Algorithm
(OP-4 and OP-5)

Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5) **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code → Not on OP Table 1.0 (Appendix A)

On OP Table 1.0 (Appendix A)

Discharge Status → = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70

= 02, or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date* minus *Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date → <18

> = 18 years

ICD-9-CM Principal Diagnosis Code → Missing

Valid

ICD-9-CM Principal Diagnosis Code → Not on OP Table 1.1a (Appendix A) → *ICD-9-CM Other Diagnosis Code* → Not on OP Table 1.1a (Appendix A)

On OP Table 1.1a (Appendix A)

ICD-9-CM Principal Diagnosis Code → On OP Table 1.1 (Appendix A)

On OP Table 1.1a (Appendix A)

Not on OP Table 1.1 (Appendix A)

Patient Not in Outpatient Chest Pain Population

Patient *is in* the Chest Pain (OP-4 and OP-5) Hospital Outpatient Population

Patient *not in* the Chest Pain Hospital Outpatient measure Population (OP-4 and OP-5)

Note: For Information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient *is* eligible to be sampled for the Chest Pain Hospital Outpatient measures (OP-4 and OP-5)

Patient *is not* eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Set OP Population Reject Case Flag = "Yes"

Return to *Data Processing Flow* (Data Transmission section) **End**

Algorithm Narrative for Chest Pain Hospital Outpatient Population
(OP-4 and OP-5)

1. Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

   a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

   a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

   a. If patient age is less than 18 years, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is missing, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is valid and not missing, proceed to ICD-9-CM Principal Diagnosis Code.

8. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Other Diagnosis Code.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1a, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

9. Check ICD-9-CM Other Diagnosis Code

   a. If the ICD-9-CM Other Diagnosis Code is not on Appendix A, OP Table 1.1a, Patient is Not in the Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Other Diagnosis Code is on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Principal Diagnosis Code.

10. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is Not in the Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all <mark>yellow highlighted</mark> areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (<mark>yellow</mark> highlighted areas).*

Steering Committee: Complete all <mark>pink</mark> highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0287   **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 Measure Title: Median Time to Fibrinolysis
De.2 Brief description of measure*:* Median time from emergency department arrival to administration of fibrinolytic therapy in ED patients with ST-segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to ED arrival and prior to transfer.
1.1-2 Type of Measure: Process   **De.3 If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 National Priority Partners Priority Area: Patient and family engagement, Safety   **De.5 IOM Quality Domain**: Timeliness   **De.6 Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes **A.2 Indicate if** Proprietary Measure (*as defined in measure steward agreement*): **A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary **A.4 Measure Steward Agreement attached:**	**A** Y☐ N☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y ☐ N ☐
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ▶**Purpose:** Public reporting, Internal quality improvement Payment incentive	C Y ☐ N ☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. **D.1Testing:** Yes, fully developed and tested **D.2** Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? Yes	D Y ☐ N ☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*):	Met Y ☐ N ☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*): **Staff Reviewer Name(s):**	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality **1a.2** **1a.3 Summary of Evidence of High Impact:** Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists´ Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004). **1a.4 Citations for Evidence of High Impact:** Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. • Fibrinolytic Therapy Trialists´ (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. Lancet. 1994; 343:311-22. • Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of	1a C ☐ P ☐ M ☐ N ☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP1]: 1a. The measure focus addresses:
● a specific national health goal/priority identified by NQF's National Priorities Partners; OR
● a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Target is to administer drug within 30 minutes time for improved outcomes.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
After trending quarterly data for both national performance and benchmark performance, from Q4-08 to Q1-10, we have seen the following results: the measure has shown a constant gap in provider median times between the national provider median time and the top 10 percentile median time since Q4-08.
669 providers submitted 1,475 eligible cases. Median patient time was 30 minutes. Median provider time was 32 minutes.

1b.3 Citations for data on performance gap:
Q1 2010 Provider Level
669 providers submitted 1,475 eligible cases.
Median 32 Minutes
Min 1 Minutes
Max 219 Minutes
5th percentile 87 Minutes
10th percentile 64.5 minutes
25th percentile 45 minutes
75th percentile 49 minutes
90th percentile 17 minutes
95th percentile 13 minutes

1b.4 Summary of Data on disparities by population group:
N/A

1b.5 Citations for data on Disparities:
N/A

1b
C ☐
P ☐
M ☐
N ☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*): Target median times are less than 30 minutes for improved outcomes.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*):
Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists´ Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004).

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*):
A ABC Scale

1c.6 Method for rating evidence: ABC Scale
• Level A (randomized controlled trial/ meta-analysis):
High quality randomized controlled trial that considers all important outcomes. High-quality meta-analysis (quantitative systematic review) using comprehensive search strategies.
• Level B (other evidence):

1c
C ☐
P ☐
M ☐
N ☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess - evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure - evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience - evidence that an association exists between the measure [... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve [... [2]

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system [... [3]

A well-designed, nonrandomized clinical trial. A nonquantitative systematic review with appropriate search strategies and well-substantiated conclusions. Includes lower quality randomized controlled trials, clinical cohort studies, and case-controlled studies with nonbiased selection of study participants and consistent findings. Other evidence, such as high-quality, historical, uncontrolled studies, or well-designed epidemiologic studies with compelling findings, is also included.
•   Level C (consensus/expert opinion):
Consensus viewpoint or expert opinion. Expert opinion is sometimes the best evidence available.

1c.7 Summary of Controversy/Contradictory Evidence: N/A

1c.8 Citations for Evidence (*other than guidelines*): • Fibrinolytic Therapy Trialists´ (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. Lancet. 1994; 343:311-22.
•   Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046-99.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number*):
"The medical system goal is to facilitate rapid recognition and
treatment of patients with STEMI such that door-to-needle (or medical contact-to-needle) time for initiation of fibrinolytic therapy can be achieved within 30 minutes" Page 597

1c.10 Clinical Practice Guideline Citation: Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004.
1c.11 National Guideline Clearinghouse or other URL: N/A

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom*):
A ABC Scale

1c.13 **Method for** rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF*):
ABC Scale
•   Level A (randomized controlled trial/ meta-analysis):
High quality randomized controlled trial that considers all important outcomes. High-quality meta-analysis (quantitative systematic review) using comprehensive search strategies.
•   Level B (other evidence):
A well-designed, nonrandomized clinical trial. A nonquantitative systematic review with appropriate search strategies and well-substantiated conclusions. Includes lower quality randomized controlled trials, clinical cohort studies, and case-controlled studies with nonbiased selection of study participants and consistent findings. Other evidence, such as high-quality, historical, uncontrolled studies, or well-designed epidemiologic studies with compelling findings, is also included.
•   Level C (consensus/expert opinion):
Consensus viewpoint or expert opinion. Expert opinion is sometimes the best evidence available.

1c.14 Rationale for using this guideline over others:
Strength of Evidence and Meta Analysis.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	1
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met?	1

Comment [k7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Rationale:	Y☐ N☐

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, <u>as specified</u>, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Ratin g**

2a. MEASURE SPECIFICATIONS	

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*):
Continuous Variable Statement:
Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator*):
During the measurement period.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*):
Patients with:
•   An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0, and
•   Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
•   An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1, and
•   ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
•   Fibrinolytic Administration as defined in the Data Dictionary

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*):
Continuous Variable Statement:
Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Patients 18 years of age and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
During the measurment period

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
Patients with:
•   An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0, and
•   Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
•   An ICD-9-CM Principal Diagnosis Code for AMI as defined in Appendix A, OP Table 1.1, and
•   ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
•   Fibrinolytic Administration as defined in the Data Dictionary

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*): •
        Patients less than 18 years of age

2a-spec s

C☐
P☐
M☐
N☐

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

- Patients who did not receive Fibrinolytic Administration within 30 minutes and had a Reason for Delay in Fibrinolytic Therapy

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
See specifications at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289 981244

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*):
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*):
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Continuous variable
2a.20 Interpretation of Score: Better quality = Lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps*):
See specificaitons at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289 981244

2a.22 Describe the method for discriminating performance (*e.g., significance testing*):
N/A

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Sampling Approaches
As previously stated in this section, hospitals have the option to sample from their population, or submit their entire population. Hospitals that choose to sample must ensure that the sampled data represent their outpatient population by using either the simple random sampling or systematic random sampling method and that the sampling techniques are applied consistently within a quarter. For example, quarterly samples for a sampling population must use consistent sampling techniques across the quarterly submission period.

- Simple random sampling - selecting a sample size (n) from a population of size (N) in such a way that every case has the same chance of being selected.
- Systematic random sampling - selecting every kth record from a population of size (N) in such a way that a sample size of n is obtained, where k = N/n rounded to the lower digit. The first sample record (i.e., the starting point) must be randomly selected before taking every kth record. This is a two-step process:
a)   Randomly select the starting point by choosing a number between one and k using a table of random numbers or a computer-generated random number; and
b)   Then select every kth record thereafter until the selection of the sample size is completed.

Each hospital is ultimately responsible that the sampling techniques applied for their hospital adhere to the sampling requirements outlined in this manual. Performance measurement systems are responsible for ensuring that the sampling techniques are applied consistently across their client hospitals.
Monthly Sampling Guidelines
It is important to point out that if a hospital elects to use the monthly sampling guidelines, the hospital is still required to meet the minimum quarterly sampling requirements. A hospital may choose to use a larger sample size than is required. Hospitals whose population size is less than the minimum number of cases per quarter for the measure set cannot sample (i.e., the entire population of cases must be selected). Given the potential for substantial variation in monthly population sizes, the monthly sample sizes should be based on the known or anticipated quarterly population size. When necessary, appropriate oversampling should be employed to ensure that the hospital meets the minimum quarterly sample size requirements. Refer to Table 3 below for guidelines in determining the number of cases that need to be sampled for each population per

month per hospital based on the quarterly population size.

Table 3: Sample Size Guidelines per Month per Hospital

Population per Quarter	Monthly Sample Size
= 80	use all cases
81-100	27
101-125	32
126-150	37
151-175	41
176-200	44
201-225	48
226-250	51
251-275	54
276-300	57
301-325	59
326-350	62
351- 75	64
376-400	66
401-425	68
426-450	70
451-500	73
501-600	79
601-700	83
701-800	87
801-900	90
901-1,000	93
1,001-2,000	108
2,001-3,000	114
3,001-4,000	117
4,001-5,000	119
5,001-10,000	124
10,001-20,000	126

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested*)
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*):
See specifications at
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289
981244

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289
981244

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289
981244

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested*)
Facility/Agency, Population: national

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested*)
Hospital, Ambulatory Care: Emergency Dept, Ambulatory Care: Hospital Outpatient

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS	

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: N/A

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
N/A

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
N/A

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: N/A

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
N/A

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
N/A

2c
C☐
P☐
M☐
N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
N/A

2d.2 Citations for Evidence:
N/A

2d.3 Data/sample *(description of data/sample and size)*: N/A

2d.4 Analytic Method *(type analysis & rationale)*:
N/A

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
N/A

2d
C☐
P☐
M☐
N☐
NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: N/A

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
N/A

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

2e
C☐
P☐
M☐
N☐
NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: N/A

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
N/A

2f
C☐
P☐
M☐
N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   8

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 ... [4]

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND ... [5]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical ... [6]

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American ... [7]

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant differe ... [8]

2f.3 Provide Measure Scores from Testing or Current Use (*description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance*):

After trending quarterly data for both national performance and benchmark performance, from Q4-08 to Q1-10, we have seen the following results: the measure has shown a constant gap in provider median times between the national provider median time and the top 10 percentile median time since Q4-08.
Q1 2010: 669 providers submitted 1,475 eligible cases. Median patient time was 30 minutes. Median provider time was 32 minutes.
Q1 2010 Provider Level
669 providers submitted 1,475 eligible cases.
Median 32 Minutes
Min 1 Minutes
Max 219 Minutes
5th percentile 87 Minutes
10th percentile 64.5 minutes
25th percentile 45 minutes
75th percentile 49 minutes
90th percentile 17 minutes
95th percentile 13 minutes

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample (*description of data/sample and size*): N/A

2g.2 Analytic Method (*type of analysis & rationale*):
N/A

2g.3 Testing Results (*e.g., correlation statistics, comparison of rankings*):
N/A

2g
C ☐
P ☐
M ☐
N ☐
NA ☐

> **Comment [KP20]:** 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2h. Disparities in Care

2h.1 If measure is stratified, provide stratified results (*scores by stratified categories/cohorts*): N/A

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:
N/A

2h
C ☐
P ☐
M ☐
N ☐
NA ☐

> **Comment [KP21]:** 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties*? — 2

Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met?
Rationale:

2
C ☐
P ☐
M ☐
N ☐

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 Current Use: In use

3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*):
CMS Hospital Outpatient Department Quality Data Reporting Program
http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1191255879384

3a
C ☐
P ☐
M ☐
N ☐

> **Comment [KP22]:** 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for <u>both</u> public reporting (e.g., focus group, cognitive testing) <u>and</u> informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years*):
N/A

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample (*description of data/sample and size*): N/A

3a.5 Methods (*e.g., focus group, survey, QI project*):
N/A

3a.6 Results (*qualitative and/or quantitative results and conclusions*):
N/A

3b/3c. Relation to other NQF-endorsed measures

3b.1 NQF # and Title of similar or related measures:
NQF # 288 Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival and NQF # 164 Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival

(for NQF staff use) Notes on similar/related endorsed or submitted measures:

3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?** Yes.	**3b** C ☐ P ☐ M ☐ N ☐ NA ☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** Measure is applicable to the Outpatient setting, additionally the median time is reported as well as performance rate percentages. **5.1 If this measure is similar to measure(s) already endorsed by NQF** (i.e., on the same topic and the same target population), **Describe why it is a more valid or efficient way to measure quality:** Measure is applicable to the Outpatient setting, additionally the median time is reported as well as performance rate percentages.	**3c** C ☐ P ☐ M ☐ N ☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** C ☐ P ☐ M ☐ N ☐

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C ☐ P ☐ M ☐ N ☐
4b. Electronic Sources	**4b**

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable   10

4b.1 Are all the data elements available electronically? (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2** If not, specify the near-term path to achieve electronic capture by most providers. NQF #164 is currently undergoing electronic retooling. It is expected the retooling will be applicable to NQF measures 287 and 288.	C☐ P☐ M☐ N☐
4c. Exclusions **4c.1** Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications? No **4c.2** If yes, provide justification.	4c C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1** Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results. N/A	4d C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation **4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues: Updates to data elements to provide clarification in abstraction and updates to selected references. **4e.2** Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*): N/A **4e.3** Evidence for costs: N/A **4e.4** Business case documentation: N/A	4e C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	4
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	4 C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.	Time-limited☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐
CONTACT INFORMATION	
Co.1 Measure Steward (Intellectual Property Owner) **Co.1** Organization	

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850   **Co.2** <u>Point of Contact</u>   Wanda, Govan-Jenkins, MS, MBS, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-
Measure Developer If different from Measure Steward   **Co.3** <u>Organization</u>   Oklahoma Foundation for Medical Quality, 14000 Quail Springs Parkway, Suite 400, Oklahoma City, Oklahoma, 73134-2600   **Co.4** <u>Point of Contact</u>   Wanda, Govan-Jenkins, MS, MBS, RN, Wanda.Govan-Jenkins@CMS.hhs.gov, 410-786-2699-
Co.5 Submitter If different from Measure Steward POC   Rebecca, Jones, MSN, RN, rjones@ofmq.com, 405-840-2891-342, Oklahoma Foundation for Medical Quality
Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development   **Ad.1** Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.   N/A
Ad.2 If adapted, provide name of original measure: N/A   **Ad.3-5** If adapted, provide original specifications URL or attachment
Measure Developer/Steward Updates and Ongoing Maintenance   **Ad.6** Year the measure was first released: 2008   **Ad.7** Month and Year of most recent revision: 07, 2010   **Ad.8** What is your frequency for review/update of this measure? Bi-annual   **Ad.9** When is the next scheduled review/update for this measure? 01, 2011
Ad.10 Copyright statement/disclaimers: N/A
Ad.11 -13 Additional Information web page URL or attachment: URL   http://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=119628998124 4
Date of Submission (*MM/DD/YY*): 12/07/2010

1c. The measure focus is:
- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR
- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - o Intermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - o Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - o Structure - evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - o Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - o Access - evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - o Efficiency - demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

2d. Clinically necessary measure exclusions are identified and must be:
- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Page 8: [6] Comment [KP16]	Karen Pace	10/5/2009 8:59:00 AM

2e. For outcome measures and other measures (e.g., resource use) when indicated:
- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;^{Error! Bookmark not defined.} OR

rationale/data support no risk adjustment.

Page 8: [7] Comment [k17]	Karen Pace	10/5/2009 8:59:00 AM

13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women).   It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Page 8: [8] Comment [k19]	Karen Pace	10/5/2009 8:59:00 AM

14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction

Measure ID#: OP-1

Outpatient Setting: Emergency Department

Performance Measure Name: Median Time to Fibrinolysis

Description: Median time from emergency department arrival to administration of fibrinolytic therapy in ED patients with ST-segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to ED arrival and prior to transfer.

Rationale: Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004).

Type of Measure: Process

Improvement Noted As: A decrease in the median value

Continuous Variable Statement: Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer.

Included Populations:
- An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and
- Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1, and
- ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
- *Fibrinolytic Administration* as defined in the Data Dictionary

Excluded Populations:
- Patients less than 18 years of age
- Patients who did not receive *Fibrinolytic Administration* within 30 minutes and had a *Reason for Delay in Fibrinolytic Therapy* as defined in the Data Dictionary

Data Elements:
- *Arrival Time*
- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *Fibrinolytic Administration*
- *Fibrinolytic Administration Date and Time*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial ECG Interpretation*
- *Outpatient Encounter Date*
- *Reason for Delay in Fibrinolytic Therapy*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires retrospective data entry.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: The median time to fibrinolysis should be analyzed in conjunction with the measure rate for fibrinolysis received within 30 minutes of emergency department arrival (OP-2). These measures, used together, will assist in understanding the median time to fibrinolysis and will identify the number of AMI patients that are receiving fibrinolysis within 30 minutes of emergency department arrival and potential opportunities for improvement to decrease the median time to fibrinolysis.

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate measure of central tendency

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at: http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm
- Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. *Lancet*. 1994; 343:311-22.
- Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). *J Am Coll Cardiol*. 2008;52:2046-99.

OP-1: Median Time to Fibrinolysis

Continuous Variable Statement: Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer.

START

Run cases that are included in the AMI Hospital Outpatient Population Algorithm and pass the edits defined in the Data Processing Flow through this measure

Initial ECG Interpretation
— Missing
— = N
= Y

Fibrinolytic Administration
— Missing
— = N
= Y

Fibrinolytic Administration Date And Time
— Missing
— = UTD

Non UTD Value

Arrival Time
— = UTD → In Measure Population (Y) → OP-1 Z

Non-UTD Value

Measurement Value = *Fibrinolytic Administration Date and Time* minus *Outpatient Encounter Date and Arrival Time* (in minutes)

Measurement Value
— > or = 0 minutes and < or = 30 minutes
— < 0 minutes or > 360 minutes
— > 30 minutes and < or = 360 minutes

In Measure Population (D) → OP-1 Z

Reason for Delay in Fibrinolytic Therapy
— = N
— = Y → Not in Measure Population (B)
— Missing

Case Will Be Rejected (X)

OP-1 Z

STOP

Note: There will be no category assignment E for this measure because it is a continuous variable.

Algorithm Narrative for OP-1: Median Time to Fibrinolysis

Continuous Variable Statement: Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer.

1. Start. Run cases that are included in the AMI Hospital Outpatient Population Algorithm and pass the edits defined in the Data Processing Flow through this measure. Proceed to Initial ECG Interpretation.

2. Check Initial ECG Interpretation

   a. If Initial ECG Interpretation is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Initial ECG Interpretation equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Initial ECG Interpretation equals YES, the case will proceed to Fibrinolytic Administration.

3. Check Fibrinolytic Administration

   a. If Fibrinolytic Administration is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Fibrinolytic Administration equals NO, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Fibrinolytic Administration equals YES, the case will proceed to Fibrinolytic Administration Date and Time.

4. Check Fibrinolytic Administration Date and Time

   a. If Fibrinolytic Administration Date and Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing case.

   b. If Fibrinolytic Administration Date and Time equals UTD, the case will proceed to a Measure Category Assignment of Y. Stop processing case.

   c. If Fibrinolytic Administration equals Non-UTD Value, the case will proceed to Arrival Time.

5. Check Arrival Time

   a. If Arrival Time equals UTD, the case will proceed to a Measure Category Assignment of Y. Stop processing case.

   b. If Arrival Time equals Non-UTD Value, the case will proceed to Measurement Value calculation.

6. Calculate the Measurement Value. Time in minutes is equal to the Fibrinolytic Administration Date and Time (in minutes) minus the Outpatient Encounter Date and Arrival Time (in minutes).

7. Check Measurement Value

   a. If Measurement Value is greater than or equal to 0 minutes and less than or equal to 30 minutes, the case will proceed to a Measure Category Assignment of D. Stop processing case.

   b. If Measurement Value is less than 0 minutes or greater than 360 minutes, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Measurement Value is greater than 30 minutes and less than or equal to 360 minutes, the case will proceed to Reason for Delay in Fibrinolytic Therapy.

8. Check Reason for Delay in Fibrinolytic Therapy.

   a. If Reason for Delay in Fibrinolytic Therapy is missing, the case will proceed to a Measure Category Assignment of X and the case will be rejected. Stop processing case.

   b. If Reason for Delay in Fibrinolytic Therapy equals YES, the case will proceed to a Measure Category Assignment of B. Stop processing case.

   c. If Reason for Delay in Fibrinolytic Therapy equals NO, the case will proceed to a Measure Category Assignment of D. Stop processing case.

HOSPITAL OUTPATIENT DEPARTMENT QUALITY MEASURES
Acute Myocardial Infarction (AMI) and Chest Pain

Set Measure ID #	Measure Short Name
OP-1[1]	Median Time to Fibrinolysis
OP-2[1]	Fibrinolytic Therapy Received Within 30 Minutes
OP-3[1]	Median Time to Transfer to Another Facility for Acute Coronary Intervention
OP-4[2]	Aspirin at Arrival
OP-5[2]	Median Time to ECG

[1]Measures only applicable to AMI Population

[2]Measures apply to both the AMI Population and Chest Pain Population

OP AMI AND CHEST PAIN GENERAL DATA ELEMENT LIST

General Data Element Name	Collected For:
Arrival Time	All Records
Birthdate	All Records
CMS Certification Number[3,4]	All Records
First Name	All Records
Hispanic Ethnicity	All Records
Last Name	All Records
National Provider Identifier[3,4]	Optional for All Records
Outpatient Encounter Date	All Records
Patient HIC#	Collected by CMS for patients with a *Payment Source* of Medicare who have a standard HIC number
Patient Identifier	All Records
Payment Source	All Records
Physician 1	Optional for All Records
Physician 2	Optional for All Records
Postal Code	All Records
Race	All Records
Sex	All Records

[3]Transmission Data Element

[4]Defined in the Transmission Data Element List within the Hospital Outpatient Measure Data Transmission section of this manual

OP AMI AND CHEST PAIN SPECIFIC DATA ELEMENT LIST

OP AMI and CP Data Element Name	Collected For:
Aspirin Received	OP-4
Discharge Date and Time	OP-3
Discharge Status	OP-1, OP-2, OP-3, OP-4, OP-5
E/M Code	OP-1, OP-2, OP-3, OP-4, OP-5
ECG	OP-5
ECG Date and Time	OP-5
Fibrinolytic Administration	OP-1, OP-2, OP-3
Fibrinolytic Administration Date and Time	OP-1, OP-2
ICD-9-CM Other Diagnosis Codes	OP-4, OP-5
ICD-9-CM Principal Diagnosis Code	OP-1, OP-2, OP-3, OP-4, OP-5
Initial ECG Interpretation	OP-1, OP-2, OP-3
Probable Cardiac Chest Pain	OP-4, OP-5
Reason for Delay in Fibrinolytic Therapy	OP-1, OP-2
Reason for No Aspirin on Arrival	OP-4
Reason for Not Administering Fibrinolytic Therapy	OP-3
Transfer for Acute Coronary Intervention	OP-3

OP-1, OP-2, OP-3, OP-4, and OP-5 Hospital Outpatient Population

The Hospital Outpatient AMI/Chest Pain measures have two distinct populations.

Acute Myocardial Infarction

The population of the OP-1 through OP-5 AMI measures is identified using 5 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-1 through OP-5 AMI Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI defined in Appendix A, OP Table 1.1.

Chest Pain

The population of the OP-4 and OP-5 Chest Pain measures is identified using 6 data elements:

- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Other Diagnosis Codes*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-4 and OP-5 Chest Pain Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 18 years, and
- An *ICD-9-CM Principal or Other Diagnosis Codes* for Chest Pain as defined in Appendix A, OP Table 1.1a.

Patients with an *ICD-9-CM Principal Diagnosis Code* for AMI are not eligible for the Chest Pain Hospital Outpatient Population

AMI Hospital Outpatient Population Algorithm
(OP-1 through OP-5)

Start AMI Hosptial Outpatient Measure Set Population Logic (cases eligible for OP-1 through OP-5) — **Start**

Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow

E/M Code
- Not on OP Table 1.0 (Appendix A)
- On OP Table 1.0 (Appendix A)

Discharge Status
- = 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, 70
- = 02 or 43

Patient Age on Outpatient Encounter Date (in years) = *Outpatient Encounter Date* minus *Birthdate*

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Patient Age on Outpatient Encounter Date
- < 18 years
- > = 18 years

ICD-9-CM Principal Diagnosis Code
- Not on OP Table 1.1 (Appendix A)
- On OP Table 1.1 (Appendix A)

Note: For information concerning sample size requirements for Outpatient AMI, refer to the Population and Sampling Specifications section in this manual.

Patient is in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "No"

Patient *Not* in Outpatient AMI Population

Patient is *not* in AMI Hospital Outpatient measure Population for OP-1 through OP-5

Patient is *not* eligible to be sampled for AMI Hospital Outpatient Measure Set

Set OP Population Reject Case Flag = "Yes"

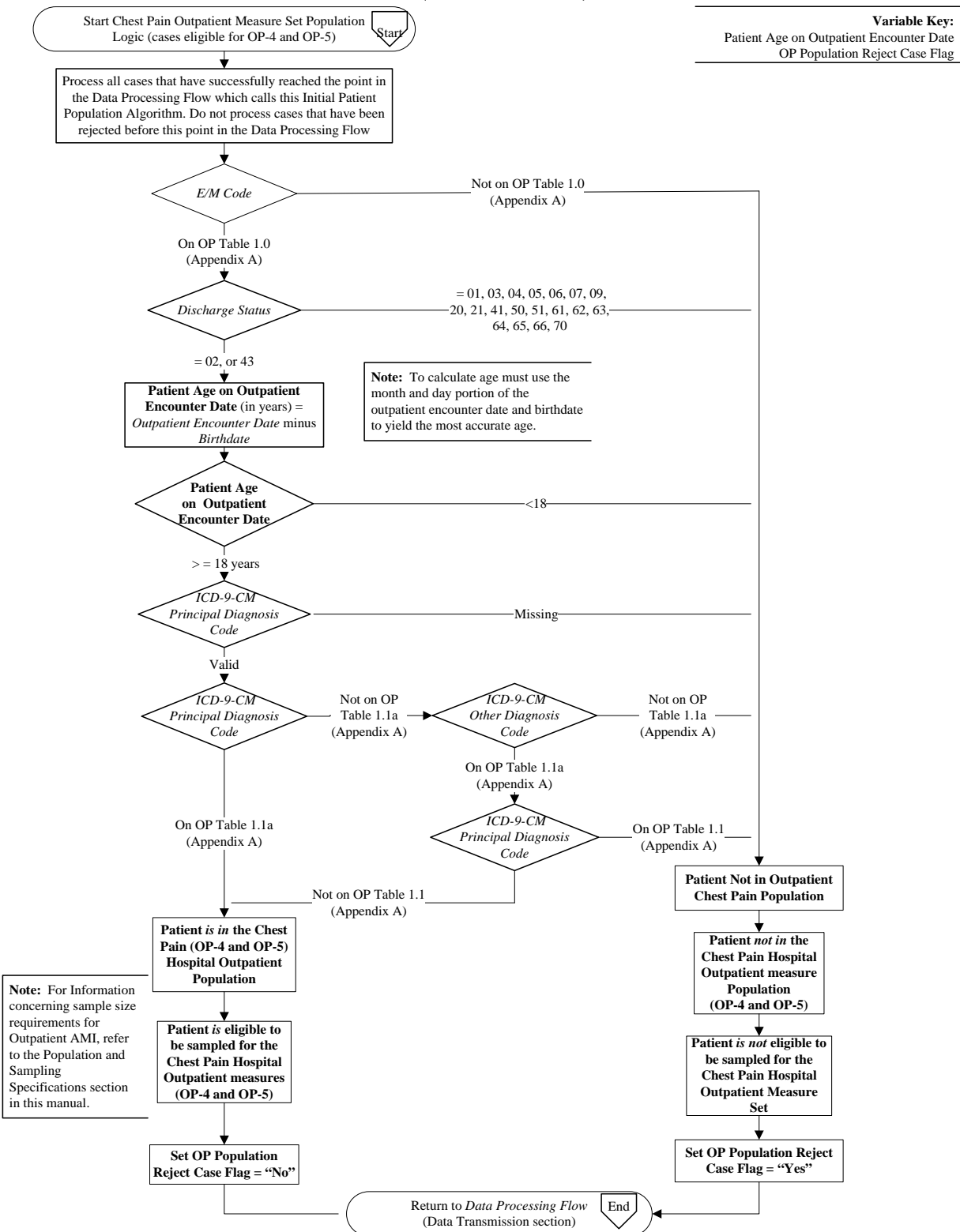Return to *Data Processing Flow* (Data Transmission section) — **End**

Algorithm Narrative for AMI Hospital Outpatient Population
(OP-1 through OP-5)

1. Start AMI Hospital Outpatient Measure Set Population logic (cases eligible for OP-1 through OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

   a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

   a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

   a. If patient age is less than 18 years, Patient is Not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

    a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is not in the Outpatient AMI Population, Patient is not in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is not eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

    b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is in AMI Hospital Outpatient Measure Population for OP-1 through OP-5, Patient is eligible to be sampled for AMI Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

Chest Pain Hospital Outpatient Population Algorithm
(OP-4 and OP-5)

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Algorithm Narrative for Chest Pain Hospital Outpatient Population
(OP-4 and OP-5)

1. Start Chest Pain Outpatient Measure Set Population Logic (cases eligible for OP-4 and OP-5).

2. Start processing all cases that have successfully reached the point in the Data Processing Flow which call this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

3. Check E and M Code

   a. If E and M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If E and M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Discharge Status.

4. Check Discharge Status

   a. If Discharge Status equals 01, 03, 04, 05, 06, 07, 09, 20, 21, 41, 50, 51, 61, 62, 63, 64, 65, 66, or 70, Patient is Not in the Outpatient Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If Discharge Status equals 02 or 43 continue processing and proceed to Patient Age on Outpatient Encounter Date.

5. Calculate Patient Age on Outpatient Encounter Date. Patient age, in years, is equal to the Outpatient Encounter Date minus the Birthdate. Use the month and day portion of the Outpatient Encounter Date and the Birthdate to yield the most accurate age.

6. Check Patient Age

   a. If patient age is less than 18 years, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If patient age is greater than or equal to 18 years, continue processing and proceed to ICD-9-CM Principal Diagnosis Code.

7. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is missing, Patient is not in the Outpatient Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is valid and not missing, proceed to ICD-9-CM Principal Diagnosis Code.

8. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Other Diagnosis Code.

   b. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1a, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.

9. Check ICD-9-CM Other Diagnosis Code

   a. If the ICD-9-CM Other Diagnosis Code is not on Appendix A, OP Table 1.1a, Patient is Not in the Chest Pain Population, Patient is not in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Other Diagnosis Code is on Appendix A, OP Table 1.1a, proceed to ICD-9-CM Principal Diagnosis Code.

10. Check ICD-9-CM Principal Diagnosis Code

   a. If the ICD-9-CM Principal Diagnosis Code is on Appendix A, OP Table 1.1, Patient is Not in the Chest Pain Population, Patient is not in Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is not eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to YES. Stop processing case.

   b. If the ICD-9-CM Principal Diagnosis Code is not on Appendix A, OP Table 1.1, Patient is in the Chest Pain Hospital Outpatient Measure Population for OP-4 and OP-5, Patient is eligible to be sampled for the Chest Pain Hospital Outpatient Measure Set and Set the OP Population Reject Case Flag to NO. Stop processing case.