



Measure Information

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

Brief Measure Information

NQF #: 0288

Corresponding Measures:

De.2. Measure Title: Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

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

De.3. Brief Description of Measure: This measure calculates the percentage of Emergency Department (ED) acute myocardial infarction (AMI) patients with ST-segment elevation on the electrocardiogram (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. The measure is calculated using chart-abstracted data, on a rolling, quarterly basis and is publicly reported, in aggregate, for one calendar year. The measure has been publicly reported, annually, by CMS as a component of its Hospital Outpatient Quality Reporting (HOQR) Program since 2012.

1b.1. Developer Rationale: Studies have shown that delays in the treatment of AMI leads to increased risk of in-hospital mortality and morbidity, with nearly 2 lives per 1,000 patients lost per hour of delay in treatment (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). The total ischemic time—the time from onset of symptoms of ST-segment myocardial infarction (STEMI) to initiation of reperfusion therapy—is the principal determinant of patient health outcomes, so timely care is essential to reduce morbidity and mortality among STEMI patients. In situations in which it is deemed unlikely or impossible that a patient will receive primary PCI, the preferred treatment option, within the guideline-recommended time window of 120 minutes from first medical contact, fibrinolytic therapy is the recommended treatment (O'Gara, 2013). When fibrinolytic therapy is indicated or chosen as the appropriate reperfusion therapy in a patient presenting with a STEMI, it should be administered as rapidly as possible to reduce both mortality and morbidity rates, with a recommended time from hospital arrival to administration of 30 minutes (O'Gara, 2013). Accordingly, NQF #0228 assesses whether fibrinolytic therapy is administered within 30 minutes of ED arrival for patients with STEMI in order to ensure that all STEMI patients, regardless of their immediate access to a PCI-capable hospital, receive high-quality, time-sensitive care.

REFERENCES:

- 1) 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.
- 2) O'Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, de Lemos JA, Ettinger SM, Fang JC, Fesmire FM, Franklin BA, Granger CB, Krumholz HM, Linderbaum JA, Morrow DA, Newby LK, Ornato JP, Ou N, Radford MJ, Tamis-Holland JE, Tommaso CL, Tracy CM, Woo YJ, Zhao DX. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2013 Jan 29;61(4):e78-140. Guideline available at: <http://content.onlinejacc.org/article.aspx?articleid=1486115>

S.4. Numerator Statement: The number of ED AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

S.7. Denominator Statement: The number of ED AMI patients with ST-segment elevation on ECG who received fibrinolytic therapy.

S.10. Denominator Exclusions: Patients are excluded who are less than 18 years of age. Additionally, patients who are not administered fibrinolytic therapy within 30 minutes AND had a Reason for Delay in Fibrinolytic Therapy, as defined in the Data Dictionary, are also excluded.

De.1. Measure Type: Process

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

S.26. Level of Analysis: Facility, Other

IF Endorsement Maintenance – Original Endorsement Date: Nov 15, 2007 **Most Recent Endorsement Date:** Jan 18, 2012

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

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

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Not applicable; this measure is not a paired or grouped measure.

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

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

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form
[NQF_0288_MeasureEvidenceForm.docx](#)

1b. Performance Gap

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

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

1b.1. Briefly explain the rationale for this measure (e.g., the benefits or improvements in quality envisioned by use of this measure) Studies have shown that delays in the treatment of AMI leads to increased risk of in-hospital mortality and morbidity, with nearly 2 lives per 1,000 patients lost per hour of delay in treatment (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). The total ischemic time—the time from onset of symptoms of ST-segment myocardial infarction (STEMI) to initiation of reperfusion therapy—is the principal determinant of patient health outcomes, so timely care is essential to reduce morbidity and mortality among STEMI patients. In situations in which it is deemed unlikely or impossible that a patient will receive primary PCI, the preferred treatment option, within the guideline-recommended time window of 120 minutes from first medical contact, fibrinolytic therapy is the recommended treatment (O'Gara, 2013). When fibrinolytic therapy is indicated or chosen as the appropriate reperfusion therapy in a patient presenting with a STEMI, it should be administered as rapidly as possible to reduce both mortality and morbidity rates, with a recommended time from hospital arrival to administration of 30 minutes (O'Gara, 2013). Accordingly, NQF #0228 assesses whether fibrinolytic therapy is administered within 30 minutes of ED arrival for patients with STEMI in order to ensure that all STEMI patients, regardless of their immediate access to a PCI-capable hospital, receive high-quality, time-sensitive care.

REFERENCES:

- 1) 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.
- 2) O'Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, de Lemos JA, Ettinger SM, Fang JC, Fesmire FM, Franklin BA, Granger CB, Krumholz HM, Linderbaum JA, Morrow DA, Newby LK, Ornato JP, Ou N, Radford MJ, Tamis-Holland JE, Tommaso CL, Tracy CM, Woo YJ, Zhao DX. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2013 Jan 29;61(4):e78-140. Guideline available at: <http://content.onlinejacc.org/article.aspx?articleid=1486115>

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

Analysis of facility-level data from Hospital Compare downloadable files indicates that there is variation in the administration of fibrinolytic therapy within 30 minutes of ED arrival for cases where patients have a principal diagnosis associated with AMI, have ST-segment elevation on the ECG performed closest to ED arrival, and received fibrinolytic therapy. During the April 2010-March 2011 data collection period, performance scores ranged from 9.0% to 100.0%, with a weighted mean of 65.2% (i.e., on average, 65.2% of STEMI patients received fibrinolytic therapy within 30 minutes of ED arrival). During the April 2014-March 2015 data collection period, performance scores ranged from 9.0% to 100.0%, with a weighted mean of 71.3%. From April 2010-March 2015, there was a

9.4% (6.1 percentage point) increase in the weighted mean of performance scores.

The data presented below represent performance scores and descriptive statistics for the facilities whose denominator counts met minimum case count requirements during the April 2010-March 2015 data collection periods.

	Data Collection Period		Percentage Point Change				
	April 2010-March 2011	April 2010-March 2015	April 2011-March 2012	April 2012-March 2013	April 2013-March 2014	April 2014-March 2015	April 2014-March 2015
Facilities	121	109	103	79	76	-	
Minimum Value	9.0	17.0	9.0	9.0	9.0	-	
1st Percentile	20.0	18.0	23.0	9.0	9.0	-11.0	
5th Percentile	27.0	38.0	29.0	36.0	33.0	6.0	
10th Percentile	38.0	42.0	40.0	39.0	42.0	4.0	
25th Percentile	50.0	58.0	53.0	56.0	58.0	8.0	
Median	65.0	70.0	69.0	73.0	73.0	8.0	
75th Percentile	80.0	82.0	78.0	86.0	84.5	4.5	
90th Percentile	91.0	91.0	91.0	95.0	93.0	2.0	
95th Percentile	92.0	93.0	93.0	100.0	100.0	8.0	
99th Percentile	100.0	100.0	97.0	100.0	100.0	-	
Maximum Value	100.0	100.0	100.0	100.0	100.0	-	
Weighted Mean Performance (Standard Deviation)	(73.5) 6.1		65.2 (82.1)	68.5 (68.7)	66.4 (74.4)	68.8 (90.4)	71.3
Number of cases who received fibrinolytic therapy (Denominator)			1,257	1,691	1,552	1,260	1,221 -

From the inception of public reporting through the March 2015 data collection periods; there has been wide variation in facility performance. The interquartile range of facility scores has been consistently wide over the years, with ranges between 24.0 and 30.0 percentage points. While median performance scores have increased, there is an ongoing opportunity for improvement in facility performance.

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

Data have been included in Section 1b.2; these data represent national performance over time, from April 2010-March 2015 data collection periods.

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

The effect of patient and facility characteristics on the likelihood of each patient being administered fibrinolytic therapy within 30 minutes of ED arrival for cases where patients have a principal diagnosis associated with AMI, have ST-segment elevation on the ECG performed closest to ED arrival, and received fibrinolytic therapy was evaluated using 2014 data submitted to the Clinical Data Warehouse (CDW). The impact of patient and facility characteristics for the 3,844 cases that met these criteria was assessed using a logistic regression model.

Primary results from the regression were related to patient demographics. Cases where patients were in age groups 40 to 50 (OR= 3.80, p= 0.03), 50 to 60 (OR= 3.85, p= 0.03), 60 to 70 (OR= 3.44, p= 0.04), and 70 to 80 (OR= 3.10, p= 0.06) were significantly more likely than patients in age group 18 to 30 to receive fibrinolytic therapy within 30 minutes of ED arrival. African-American patients were significantly less likely than White patients to have received fibrinolytic therapy within 30 minutes of ED arrival (OR= 0.60, p= 0.001). In comparison to non-Hispanic patients, Hispanic patients were less likely to have received fibrinolytic therapy within 30 minutes of ED arrival (OR= 0.65, p= 0.03). Finally, female patients were less likely than male patients to have received fibrinolytic therapy within 30 minutes of ED arrival (OR= 0.77, p< 0.001).

The delivery of fibrinolytic therapy within 30 minutes of ED arrival for cases where patients have a principal diagnosis of AMI, have ST-segment elevation on the ECG performed closest to ED arrival, and received fibrinolytic therapy varied by the characteristics of

the facility where the patient received care. When compared to patients treated in facilities with fewer than 50 beds (a proxy for facility size), patients treated in facilities with 101-250 beds (OR= 1.74, p= 0.002) and 251 to 500 beds (OR= 2.02, p= 0.017) were significantly more likely to have received fibrinolytic therapy within 30 minutes of ED arrival.

The regression model identified subpopulations of patients and facilities for which there are statistically significant differences in the likelihood of each patient in the initial patient population—those who have a principal diagnosis of AMI, have ST-segment elevation on the ECG performed closest to ED arrival, and received fibrinolytic therapy—being administered fibrinolytic therapy within 30 minutes of ED arrival; however, these disparities do not indicate a need for risk adjustment. Adjusting for these differences would mask underlying differences in quality of care. As this is a process measure, there should be no difference in the standard of care for these patients; these statistically significant differences are likely driven by variation in provider practice. Consequently, risk adjustment or stratification is not necessary or appropriate for this measure.

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

Not applicable, as there are available data for disparities in care.

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

The measure addresses:

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

1c.1. Demonstrated high priority aspect of healthcare

A leading cause of morbidity/mortality, Patient/societal consequences of poor quality, Severity of illness

1c.2. If Other:

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

List citations in 1c.4.

According to the Centers for Disease Control and Prevention (CDC) and American Heart Association (AHA), approximately 735,000 Americans experience an AMI every year, of which 29-47 percent are estimated to be STEMI (Mozzaffarian, 2015). Time to fibrinolytic therapy is a strong predictor of morbidity and mortality outcomes in patients with a STEMI. 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 STEMI (O'Gara, 2013).

To complement a review of the literature, national statistics on ED use from the Healthcare Cost and Utilization Project (HCUP) National Emergency Department Sample (NEDS) were extracted to estimate the total population of patients with a principal diagnosis associated with AMI. In 2013, there were an estimated 546,352 ED visits with a primary diagnosis of AMI. Most patients were ages 65-84 (42.3%), followed by patients ages 45-64 (37.2%), 85+ (14.2%), 18-44 (5.6%), and finally patients under 18 (0.7%). There were more male patients (61.1%) than female patients (39.9%).

Additionally, the Department of Health and Human Services (DHHS) includes AMI care in a number of national programs, including the Million Hearts Campaign and Healthy People 2020. Both of these initiatives galvanize existing efforts and new programs to improve cardiovascular health and quality of life through prevention, detection, and treatment of AMI and strokes (Frieden and Berwick 2011; DHHS 2014). Reducing door-to-fibrinolytic administration time through the continued reporting of NQF #0288 can help DHHS achieve its Healthy People 2020 objective of "increas[ing] the proportion of eligible patients with heart attacks who receive fibrinolytic therapy within 30 minutes of hospital arrival" (DHHS 2014).

Furthermore, recent literature supports existing evidence that only a minority of U.S. hospitals are capable of providing PCI, the preferred treatment for patients with STEMI. Over the past decade, disproportionate expansion of PCI-capable facilities across the country has created gaps in access to primary PCI (Langabeer, 2013; O'Gara, 2013; Ellis, 2004). As fibrinolytic therapy is the recommended treatment when it is deemed unlikely or impossible that a patient will receive primary PCI within the guideline-recommended time window of 120 minutes from first medical contact, it is important to continue reporting NQF #0288 in order to improve the quality of care for all individuals experiencing a STEMI.

The literature and utilization data demonstrate that AMI treatment remains a high priority aspect of healthcare because AMI is a leading cause of morbidity and mortality that affects a large number of individuals, with severe consequences resulting from poor quality of care.

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

- 1) Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, de Ferranti S, Després J-P, Fullerton HJ, Howard VJ, Huffman MD, Judd SE, Kissela BM, Lackland DT, Lichtman JH, Lisabeth LD, Liu S, Mackey RH, Matchar DB, McGuire DK, Mohler ER 3rd, Moy CS, Muntner P, Mussolino ME, Nasir K, Neumar RW, Nichol G, Palaniappan L, Pandey DK, Reeves MJ, Rodriguez CJ, Sorlie PD, Stein J, Towfighi A, Turan TN, Virani SS, Willey JZ, Woo D, Yeh RW, Turner MB; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*. 2015;131(4):e29-322.
- 2) O’Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, de Lemos JA, Ettinger SM, Fang JC, Fesmire FM, Franklin BA, Granger CB, Krumholz HM, Linderbaum JA, Morrow DA, Newby LK, Ornato JP, Ou N, Radford MJ, Tamis-Holland JE, Tommaso CL, Tracy CM, Woo YJ, Zhao DX. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2013 Jan 29;61(4):e78-140. Guideline available at: <http://content.onlinejacc.org/article.aspx?articleid=1486115>
- 3) Frieden TR and Berwick D. The “Million Hearts” initiative – preventing heart attacks and strokes. *N Engl J Med*. 2011;365:e27.
- 4) DHHS. 2014. HDS-19.1 Increase the proportion of eligible patients with heart attacks who receive fibrinolytic therapy within 30 minutes of hospital arrival. http://www.healthypeople.gov/node/4579/data_details
- 5) Langabeer JR, Henry TD, Kereiakes DJ, Dellifraie J, Emert J, Wang Z, Stuart L, King R, Segrest W, Moyer P, Jollis JG. Growth in percutaneous coronary intervention capacity relative to population and disease prevalence. *J Am Heart Assoc*. 2013 Oct 28;2(6):e000370.
- 6) Ellis SG, Armstrong P, Betriu A, Brodie B, Herrmann H, Montalescot G, Neumann FJ, Smith JJ, Topol E; on behalf of the Facilitated Intervention with Enhanced Reperfusion Speed to Stop Events (FINESSE) Investigators. Facilitated percutaneous coronary intervention versus primary percutaneous coronary intervention: design and rationale of the Facilitated Intervention with Enhanced Reperfusion Speed to Stop Events (FINESSE) trial. *Am Heart J*. 2004 Apr;147(4):E16.

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

This measure is not a PRO-PM measure.

2. Reliability and Validity—Scientific Acceptability of Measure Properties

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

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

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

Cardiovascular, Cardiovascular : Coronary Artery Disease (AMI)

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

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

<https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1196289981244>

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

the specifications)

This is not an eMeasure Attachment:

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

Attachment Attachment: NQF_0288_MeasureCodeSet.xlsx

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

NQF #0288 was first endorsed by NQF in November 2007. Since its most recent endorsement in 2012, the measure specifications have been updated to reflect clinical changes in appropriate STEMI diagnosis or ED evaluation and management (E/M) codes; to address stakeholder feedback; and to harmonize with a similar measure in the Hospital Inpatient Quality Reporting (HIQR) program.

In 2012, the data elements were updated to provide clarification in abstraction and updates were made to selected references, including an updated version of the referenced guidelines. The Discharge Status data element was changed to Discharge Code. Multiple clarifications and modifications were made to the Initial ECG Interpretation data element to eliminate false inclusions and exclusions, and the list of negative qualifiers and modifiers was updated to align with a measure reported in the HIQR Program. The Reason for Delay in Fibrinolytic Therapy data element was also updated to align with the HIQR specifications.

In 2013, as part of the annual measure maintenance and review process, clarification was added to the Measure Information Form (MIF) regarding the use of retrospective and concurrent data. The cited guidelines for the management of STEMI were updated. Changes were made to the Arrival Time data element for all HOQR measures, and brand names were removed from the Reason for Delay in Fibrinolytic Therapy data element to avoid the appearance of endorsement.

In 2014, left bundle branch block (LBBB) was removed from the measure as an inclusionary ECG finding in order to align with updates made in the 2013 STEMI guidelines (O’Gara, 2013).

In 2015, all ICD-9-CM diagnosis codes were updated to corresponding ICD-10-CM diagnosis codes.

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

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

The number of ED AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

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

Numerator: Fibrinolytic administration within a three-month period, aggregated on a rolling, quarterly basis for ED AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

Denominator: Fibrinolytic administration within a three-month period, aggregated on a rolling, quarterly basis for ED AMI patients with ST-segment elevation on ECG who received fibrinolytic therapy.

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

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

The numerator is defined by six evaluation and management (E/M) codes and 18 ICD-10-CM diagnosis codes included in the value set for this measure; these detailed lists can be found in the Excel workbook provided for Section S2b.

The numerator includes patients age 18 or older who have ST-elevation on the ECG closest to ED arrival and who receive fibrinolytic therapy within 30 minutes or less of ED arrival. There are no numerator exceptions.

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

The number of ED AMI patients with ST-segment elevation on ECG who received fibrinolytic therapy.

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

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

The denominator is defined by six evaluation and management (E/M) codes and 18 ICD-10-CM diagnosis codes included in the value set for this measure; these detailed lists can be found in the Excel workbook provided for Section S2b.

The denominator includes patients who are discharged or transferred to a short-term general hospital for inpatient care or to a Federal healthcare facility, who have ST-segment elevation on the ECG performed closest to ED arrival, and who receive fibrinolytic therapy.

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

Patients are excluded who are less than 18 years of age. Additionally, patients who are not administered fibrinolytic therapy within 30 minutes AND had a Reason for Delay in Fibrinolytic Therapy, as defined in the Data Dictionary, are also excluded.

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

Cases are excluded for any patients that meet any of the following criteria:

- Patients less than 18 years of age.
- Patients who did not receive Fibrinolytic Administration within 30 minutes (Fibrinolytic Administration Date and Fibrinolytic Administration Time (in minutes) minus Outpatient Encounter Date and Arrival Time (in minutes) is greater than 30 minutes) AND had a Reason for Delay in Fibrinolytic Therapy, as defined in the Data Dictionary.

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

Not applicable; this measure does not stratify its results.

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

No risk adjustment or risk stratification

If other:

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

Not applicable; this measure does not risk adjust.

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

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

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

No risk model specifications are provided, as risk adjustment or stratification is not necessary for this measure.

S.16. Type of score:

Other (specify):

If other: Percentage

S.17. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score,

a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

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

This measure calculates the percentage of ED AMI patients with ST-segment elevation 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. The patient population is determined from two algorithms; the AMI Hospital Outpatient Population algorithm as well as the NQF #0288 measure-specific algorithm. The measure is calculated based on four consecutive quarters of hospital outpatient claims data, as follows:

1. Check E/M Code; if on Table 1.0 (in the Excel workbook provided for Section S2b), proceed
2. Check Discharge Code; include patients with discharge code of 4a or 4d
3. Calculate Patient Age (Outpatient Encounter Date - Birthdate)
4. Check Patient Age; if ≥ 18 , proceed
5. Check ICD-10-CM Principal Diagnosis Code; if on Table 1.1 (in the Excel workbook provided for Section S2b), proceed to the measure-specific algorithm
6. Check Initial ECG Interpretation; if "Yes," proceed
7. Check Fibrinolytic Administration; if "Yes," proceed, record as the denominator
8. Check Fibrinolytic Administration Date; if a Non-Unable to Determine (UTD) value, proceed
9. Check Fibrinolytic Administration Time; if a Non-UTD value, proceed
10. Check Arrival Time; if a Non-UTD value, proceed
11. Calculate Time to Fibrinolysis (Fibrinolytic Administration Time minus Arrival Time)
12. Check Time to Fibrinolysis; if ≥ 0 min and ≤ 30 min, record as the numerator. If > 30 min and $= 360$ min, proceed
13. Check Reason for Delay in Fibrinolytic Therapy; if "Yes," patient is excluded from measure population. If "No," record in the denominator. Aggregate denominator and numerator counts by Medicare provider number
14. Measure = numerator counts / denominator counts [The value should be recorded as a percentage]

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

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

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

Sampling is a process of selecting a representative part of a population in order to estimate the hospital's performance without collecting data for its entire population. Using a statistically valid sample, a hospital can measure its performance in an effective and efficient manner. Sampling is a particularly useful technique for performance measures that require primary data collection from a source such as the medical record. Sampling should not be used unless the hospital has a large number of cases in the outpatient population because a fairly large number of cases are needed to achieve a representative sample of the population. For the purpose of sampling outpatient department quality measures, the terms "sample," "effective sample," and "case" are defined below:

- The "sample" is the fraction of the population that is selected for further study.
- "Effective sample" refers to the part of the sample that makes it into the denominator of an outpatient measure set. This is defined as the sample for an outpatient measure set minus all the exclusions and contraindications for the outpatient measure set in the sample.
- A "case" refers to a single record (or an encounter) within the population. For example, during the first quarter a hospital may have 100 patients who had a principal diagnosis associated with the OP-1, 2, 3, 4, and 5 measures. The hospital's outpatient population would include 100 cases or 100 outpatient records for these measures during the first quarter.

To obtain statistically valid sample data, the sample size should be carefully determined, and the sample cases should be randomly selected in such a way that the individual cases in the population have an equal chance of being selected. Only when the sample data truly represent the whole population can the sample-based performance outpatient measure set data be meaningful and useful. Each hospital is ultimately responsible for adhering to the sampling requirements outlined in the specifications manual, available at Web page URL identified in Section S.1.

As a general rule/policy of CMS, hospitals are encouraged to submit as many cases as possible up to the entire population of cases if reasonably feasible. For example, if the raw data can be easily extracted from an existing electronic database or the abstraction burden is manageable, hospitals should consider submitting the entire population of cases that meet the initial selection criteria. Otherwise, a statistically valid sample can be selected.

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

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

This measure does not use survey data.

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

Required for Composites and PRO-PMs.

The measure does not make any adjustments for missing data. If data are missing, the case will proceed to Measure Category Assignment of X and will be rejected. While abstractors cannot submit missing data, they may submit a value of "UTD" for select data elements. Depending on the data element the case is then either excluded from the denominator or excepted from the numerator. Frequency and distribution of data with a value of "UTD" are reported in the attached Measure Testing Form.

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

If other, please describe in S.24.

Claims, Other, Paper Medical Records

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

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

An electronic data collection tool is made available from vendors or facilities can download the free CMS Abstraction & Reporting Tool (CART). Paper tools for manual abstraction, which are posted on www.QualityNet.org, are also available for the CART tool.

These tools are posted on www.QualityNet.org.

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

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

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

Facility, Other

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

Inpatient/Hospital

If other:

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

Not applicable; this is not a composite measure.

2a. Reliability – See attached Measure Testing Submission Form

2b. Validity – See attached Measure Testing Submission Form

[NQF_0288_MeasureTestingForm.docx](#)

3. Feasibility

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

3a. Byproduct of Care Processes

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

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

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

If other:

3b. Electronic Sources

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

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

Some data elements are in defined fields in electronic sources

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

NQF #0288 shares key data elements with an electronic clinical quality measure (eCQM), #0164: Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival. The potential for e-specification will require special attention to the Initial ECG Interpretation and Reason for Delay in Fibrinolytic Therapy data elements, since these currently rely on logic and inferences that abstractors have been trained to interpret. Abstractors often rely on ECG print-outs and medical notes to determine the presence of ST-segment elevation on an ECG, and acceptable reasons for delay in fibrinolytic therapy typically require a review of medical notes.

Use of EHR data will require vendors to develop mechanisms to capture ECG findings, which are currently used to define the measure's denominator, in a structured field; because of the complicated nature of ECG interpretation, results included in a structured field should come from a review by an eligible provider rather than the ECG machine's output. Because clinical or patient-centered reasons for not administering fibrinolytic therapy exist and effectively exclude patients from the measure, this data will also need to be captured and made available for measurement or clinical decision support within the EHR workflow.

The AMI and Stroke expert work group (EWG) considers NQF #0288 to be wholly feasible as it is currently specified, but considers e-specification to be moderately feasible. They concur that the key data elements for NQF #0288 are not readily available in a structured format within all EHR systems. In particular, EHR systems may need new structured fields for Initial ECG Interpretation and Reason for Delay in Fibrinolytic Therapy, which are not perceived to be a standard feature for most systems at this time.

Based on EWG feedback, the availability of the information from the data elements is highly dependent upon the EHR system used in each facility. If they cannot be translated into structured fields, then the data elements must be manually chart abstracted.

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

No feasibility assessment Attachment:

3c. Data Collection Strategy

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

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

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

An online survey of five members of the AMI and Stroke EWG with expertise in cardiology, neuro-radiology, emergency medicine, emergency transport, and emergency nursing was conducted to assess the face validity, feasibility, use, and usability of NQF #0228. All participants agreed or strongly agreed that patients who receive fibrinolytic therapy within 30 minutes of arrival to the ED can be accurately captured using chart-abstracted data. Additionally, the majority of participants agreed that practical aspects of reporting this chart-abstracted measure do not place undue burden on facilities that collect the data.

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

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

4. Usability and Use

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

4a. Accountability and Transparency

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

4.1. Current and Planned Use

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

Planned	Current Use (for current use provide URL)
	Public Reporting Hospital Outpatient Quality Reporting (HOQR) http://www.medicare.gov/hospitalcompare/search.html Hospital Outpatient Quality Reporting https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1192804531207

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

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

Public Reporting:

Name of program and sponsor: CMS HOQR Program

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

Accountable entities and patients: The publicly reported values (on Hospital Compare) are calculated for all facilities in the United States that meet minimum case count requirements. The number of facilities that met minimum case count criteria during the April 2010-March 2015 data collection periods ranged from 76-121 facilities, annually. The number of facilities meeting minimum case count criteria by year is presented in Section 1b.2. Facilities eligible to report this measure are subject to the Outpatient Prospective Payment System (OPPS) guidelines.

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

Name of program and sponsor: CMS HOQR Program

Purpose: The HOQR Program is a pay for quality data reporting program implemented by CMS for outpatient hospital services. In addition to providing hospitals with a financial incentive to report their quality of care measure data, the data is publicly reported on the Hospital Compare Website. The data reported on Hospital Compare not only shows the hospital's score on the measure, but also

provides state and national averages for the measure. This enables consumers to compare the hospital's performance to other facilities and determine if the facility is an outlier.

Accountable entities and patients: The publicly reported values (on Hospital Compare) are calculated for all facilities in the United States that meet minimum case count requirements. The number of facilities that met minimum case count criteria during the April 2010-March 2015 data collection periods ranged from 76-121 facilities, annually. The number of facilities meeting minimum case count criteria by year is presented in Section 1b.2. Facilities eligible to report this measure are subject to the OPPS guidelines.

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

This measure is publicly reported.

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

This measure is publicly reported.

4b. Improvement

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

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

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

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

Summary statistics of performance scores from the April 2010-March 2015 data collection periods are provided in Section 1b.2.

The median rate of fibrinolytic therapy administered within 30 minutes of ED arrival, given the patient had a principal diagnosis associated with AMI, had ST-segment elevation of the ECG closest to ED arrival, and received fibrinolytic therapy, has increased between the 2010 and 2015 data collection periods (65.0% to 73.0%). One hundred twenty-one facilities met minimum case count requirements during the April 2010-March 2011 data collection period and 76 facilities met minimum case count requirements during the April 2014-March 2015 data collection period. During the April 2010-March 2011 data collection period, there were 1,930 sampled cases where a patient had a principal diagnosis associated with AMI, had ST-segment elevation of the ECG closest to ED arrival, and received fibrinolytic therapy. Of those cases, 1,257 were administered fibrinolytic therapy within 30 minutes of ED arrival (65.1%). During the April 2014-March 2015 data collection period, there were 1,221 sample cases where a patient had a principal diagnosis associated with AMI, had ST-segment elevation of the ECG closest to ED arrival, and received fibrinolytic therapy. Of those cases, 871 were administered fibrinolytic therapy within 30 minutes of ED arrival (71.3%).

These cases reflect only a subset of the patients eligible for the measure. Dependent upon the facility's total case count, the facility may report all cases or a sample of cases; thus, the number of patients receiving high-quality healthcare as performance on the measure improves is larger than the number of cases captured by the measure.

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

Not applicable, as there is demonstrated improvement in measure performance over time.

4c. Unintended Consequences

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

4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative

unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.

Measure testing did not identify any unintended consequences. Similarly, no evidence of unintended consequences to individuals or populations has been reported by external stakeholders since its implementation. The potential for unintended consequences will continue to be monitored through an annual review of the literature as well as an ongoing review of stakeholder comments and inquiries.

5. Comparison to Related or Competing Measures

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

5. Relation to Other NQF-endorsed Measures

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

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

0163 : Primary PCI received within 90 minutes of hospital arrival

0290 : Median Time to Transfer to Another Facility for Acute Coronary Intervention

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

Median Time to Fibrinolysis – Centers for Medicare and Medicaid Services (CMS)

Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival – CMS

5a. Harmonization

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

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

Are the measure specifications completely harmonized?

No

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

NQF #0288 and NQF #0290 are both in the HOQR Program, and NQF #0163 is included in the Hospital Inpatient Quality Reporting (HIQR) Program as an electronically specified clinical quality measure (eCQM). The two measures use the same initial patient population – patients with AMI and ST-segment elevation on the ECG performed closest to emergency department arrival who are transferred from the emergency department to a short-term general hospital for inpatient care, or to a Federal healthcare facility. While the target populations are the same, the focus of the two measures is different. NQF #0288 focuses on the timely administration of fibrinolytic therapy and the focus of NQF #0290 is the timely transfer of patients who require PCI. Although NQF #0163 (used in the HIQR Program) is similar to NQF #0288 (HOQR), the two measures serve different target populations and purposes: NQF #0288 focuses on timely administration of fibrinolytic therapy, while NQF #0163 focuses on the timely initiation of PCI for a patient who arrives at a PCI-capable hospital. All three measures share a number of key data elements (i.e., Initial ECG Interpretation, Fibrinolytic Administration, and Arrival Time). The specifications for the three measures are generally aligned, where possible.

5b. Competing Measures

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

OR

Multiple measures are justified.

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

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

No competing measures that address both the same measure focus and target population as NQF #0288 were identified.

Appendix

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

Attachment **Attachment:** [NQF_0288_Measure_Algorithm.pdf](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): Centers for Medicare and Medicaid Services

Co.2 Point of Contact: Kristie Baus, Kristie.baus@cms.hhs.gov, 410-786-8161-

Co.3 Measure Developer if different from Measure Steward: The Lewin Group

Co.4 Point of Contact: Colleen, McKiernan, Colleen.McKiernan@lewin.com, 703-269-5595-

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

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

The contractor has convened an EWG, which evaluates and provides feedback on measure-development and maintenance efforts for a set of five AMI and one stroke measure. Specifically, the EWG provides direction and feedback through all phases of project activities, including expansion of the measures to additional CMS quality reporting programs, updates to the current specifications of these six measures, review of quantitative testing results, feedback on qualitative testing questions (i.e., results of EWG member questionnaires), and support for endorsement of the measures by the National Quality Forum (NQF).

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

Joseph P. Drozda, Jr., MD

TEP 2010; Mercy Health, Rep. of American College of Cardiology; Director of Outcomes Research

Mustapha Ezzeddine, MD

University of Minnesota Medical Center, Director, Stroke Program

T. Bruce Ferguson, Jr., MD, FACC

TEP 2010; Brody School of Medicine at ECU, Dept. of Cardiovascular Sciences, Professor of Surgery and Physiology

Joseph V. Messer, MD, MACC

TEP 2010; Rush University Medical Center, Rep. of American Medical Association, Professor of Medicine

Cathy Olson, MSN, RN

Emergency Nurses Association (ENA), Institute for Quality, Safety, and Injury Prevention, Director

David Seidenwurm, MD

American Society of Neuroradiology (ASNR); American College of Radiologists (ACR)

Stephen Traub, MD

TEP 2010; Mayo Clinic, Department of Emergency Medicine, Chair

Paul D. Varosy, MD, FACC, FAHA, FHRS

TEP 2010; VA Eastern Colorado Health Care System, Director of Cardiac Electrophysiology

Matt Zavadsky, MS-HPA
National Association of Emergency Medical Technicians (NAEMT)

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2008

Ad.3 Month and Year of most recent revision: 01, 2016

Ad.4 What is your frequency for review/update of this measure? Annually

Ad.5 When is the next scheduled review/update for this measure? 01, 2017

Ad.6 Copyright statement: This measure does not have a copyright.

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Ad.8 Additional Information/Comments: