



Measure Information

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

Brief Measure Information

NQF #: 3613e

Corresponding Measures:

De.2. Measure Title: Appropriate Treatment for ST-Segment Elevation Myocardial Infarction (STEMI) Patients in the Emergency Department (ED)

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

De.3. Brief Description of Measure: The percentage of ED patients with a diagnosis of STEMI who received appropriate and timely treatment. The measure will be calculated using electronic health record (EHR) data and is intended for use at the facility level in a CMS accountability program, through which it may be publicly reported.

1b.1. Developer Rationale: Primary PCI is the preferred revascularization approach, and for patients presenting to hospitals with on-site PCI capabilities guidelines recommend PCI be performed within 90 minutes. For patients presenting to hospitals with primary PCI capabilities, D2B time has shown marked improvements over time, and most hospitals are able to deliver PCI within 90 minutes of patient arrival. The median time to primary PCI in the National Cardiovascular Data Registry in 2014 was 59 min (10th, 50th, and 90th percentiles of 70, 60, and 48 min, respectively) (Masoudi et. al., 2017). In situations where a patient arrives at a non-PCI capable hospital but can be transferred for primary PCI to a PCI referral center, guidelines recommend that primary PCI be performed within 120 minutes (O'Gara et al., 2013). However, for patients transferred from non-PCI-capable hospitals to PCI-capable hospitals, a nationwide study of 14,518 showed that more than one-third of patients failed to meet recommended guidelines for door-to-balloon time (Dauerman et al, 2015).

In situations where it is unlikely or impossible for a patient to receive primary PCI within the 120-minute timeframe, guidelines recommend that fibrinolytic therapy be used for reperfusion and should be rapidly administered to reduce mortality and minimize morbidity; guidelines recommend that fibrinolytic therapy administration occur within 30 minutes of hospital arrival (O'Gara et al., 2013). CMS measures receipt of fibrinolytic therapy within 30 minutes of ED arrival (OP-2) and the time to transfer to a PCI referral center from a non PCI-capable facility (OP-3). Performance data on OP-2 and OP-3 suggest that opportunities remain for facilities to improve timely delivery of fibrinolytic therapy in the ED and expedited transfer to PCI-capable facilities. For the April 2018 through March 2019 data collection period, proportion of patients receiving fibrinolytics within 30 minutes in the OP-2 measure varied from 14% to 100%, with the weighted mean of 70.4%. Similarly, for patients undergoing transfer, for the April 2018 through March 2019 data collection period, performance scores on OP-3 varied from 19 minutes to 106 minutes, with a weighted mean of 54.22 minutes.

REFERENCES:

1. Centers for Medicare & Medicaid Services (2020). Hospital Compare facility-level data. Accessed from <https://data.medicare.gov/data/hospital-compare>.
2. Dauerman HL, Bates ER, Kontos MC, Li S, Garvey JL, Henry TD, Manoukian SV, Roe MT. Nationwide analysis of patients with ST-segment-elevation myocardial infarction transferred for primary percutaneous intervention: Findings from the American Heart Association mission: Lifeline program. *Circulation: Cardiovascular Interventions*. 2015; 8(5): e002450. doi: 10.1161/CIRCINTERVENTIONS.114.002450.
3. Masoudi FA, Ponirakis A, de Lemos JA, Jollis JG, Kremers M, Messenger JC, Moore J, Moussa I, Oetgen WJ, Varosy PD, Vincent R N, Wei J, Curtis JP, Roe MT & Spertus JA. (2017). Trends in U.S. Cardiovascular Care: 2016 Report From 4 ACC National Cardiovascular Data Registries. *Journal of the American College of Cardiology*, 69(11), 1427–1450. Available at: <https://doi.org/10.1016/j.jacc.2016.12.005>.
4. 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: ED STEMI patients aged 18 and older whose time from ED arrival to fibrinolysis is 30 minutes or fewer OR Non-transfer ED STEMI patients who received PCI at a PCI-capable hospital within 90 minutes of arrival OR ED STEMI patients who were transferred from a non-PCI capable hospital within 45 minutes of ED arrival at a non-PCI capable hospital.

S.6. Denominator Statement: ED patients 18 years of age and older with STEMI who should have received appropriate and timely treatment for STEMI.

S.8. Denominator Exclusions: The denominator exclusions were derived from the 2013 ACCF/AHA Guideline for the Management of STEMI (<http://www.onlinejacc.org/content/accj/61/4/e78.full.pdf?download=true>), which was also the basis of OP-2 (Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival) and OP-3 (Median Time to Transfer to Another Facility for Acute Coronary Intervention). Denominator exclusions include the following conditions, which have to be documented as active in the patient's history at the time of the encounter: active bleeding or bleeding diathesis (excluding menses); ischemic stroke; known malignant intracranial neoplasm (primary or metastatic); known structural cerebral vascular lesion (e.g., AVM); significant facial and/or closed head trauma, any prior intracranial hemorrhage or other known intracranial pathology; suspected aortic dissection; active peptic ulcer; cardiopulmonary arrest; intubation; mechanical circulatory assist device placement; oral anticoagulant therapy prior to arrival (including streptokinase treatment); patients with advanced dementia; pregnancy; recent internal bleeding; recent major surgery; intracranial or intraspinal surgery, and severe neurologic impairment (based on Glasgow coma).

De.1. Measure Type: Process

S.17. Data Source: Electronic Health Records

S.20. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date:

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

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

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? N/A

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

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

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

[STEMIeCQM NQF Evidence Attach 04022021.docx](#)

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

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

1b. Performance Gap

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

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

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

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

Primary PCI is the preferred revascularization approach, and for patients presenting to hospitals with on-site PCI capabilities guidelines recommend PCI be performed within 90 minutes. For patients presenting to hospitals with primary PCI capabilities, D2B time has shown marked improvements over time, and most hospitals are able to deliver PCI within 90 minutes of patient arrival. The median time to primary PCI in the National Cardiovascular Data Registry in 2014 was 59 min (10th, 50th, and 90th percentiles of 70, 60, and 48 min, respectively) (Masoudi et. al., 2017). In situations where a patient arrives at a non-PCI capable hospital but can be transferred for primary PCI to a PCI referral center, guidelines recommend that primary PCI be performed within 120 minutes (O’Gara et al., 2013). However, for patients transferred from non-PCI-capable hospitals to PCI-capable hospitals, a nationwide study of 14,518 showed that more than one-third of patients failed to meet recommended guidelines for door-to-balloon time (Dauerman et al, 2015).

In situations where it is unlikely or impossible for a patient to receive primary PCI within the 120-minute timeframe, guidelines recommend that fibrinolytic therapy be used for reperfusion and should be rapidly administered to reduce mortality and minimize morbidity; guidelines recommend that fibrinolytic therapy administration occur within 30 minutes of hospital arrival (O’Gara et al., 2013). CMS measures receipt of fibrinolytic therapy within 30 minutes of ED arrival (OP-2) and the time to transfer to a PCI referral center from a non PCI-capable facility (OP-3). Performance data on OP-2 and OP-3 suggest that opportunities remain for facilities to improve timely delivery of fibrinolytic therapy in the ED and expedited transfer to PCI-capable facilities. For the April 2018 through March 2019 data collection period, proportion of patients receiving fibrinolytics within 30 minutes in the OP-2 measure varied from 14% to 100%, with the weighted mean of 70.4%. Similarly, for patients undergoing transfer, for the April 2018 through March 2019 data collection period, performance scores on OP-3 varied from 19 minutes to 106 minutes, with a weighted mean of 54.22 minutes.

REFERENCES:

1. Centers for Medicare & Medicaid Services (2020). Hospital Compare facility-level data. Accessed from <https://data.medicare.gov/data/hospital-compare>.
2. Dauerman HL, Bates ER, Kontos MC, Li S, Garvey JL, Henry TD, Manoukian SV, Roe MT. Nationwide analysis of patients with ST-segment-elevation myocardial infarction transferred for primary percutaneous intervention: Findings from the American Heart Association mission: Lifeline program. *Circulation: Cardiovascular Interventions*. 2015; 8(5): e002450. doi: 10.1161/CIRCINTERVENTIONS.114.002450.
3. Masoudi FA, Ponirakis A, de Lemos JA, Jollis JG, Kremers M, Messenger JC, Moore J, Moussa I, Oetgen WJ, Varosy PD, Vincent R N, Wei J, Curtis JP, Roe MT & Spertus JA. (2017). Trends in U.S. Cardiovascular Care: 2016 Report From 4 ACC National Cardiovascular Data Registries. *Journal of the American College of Cardiology*, 69(11), 1427–1450. Available at: <https://doi.org/10.1016/j.jacc.2016.12.005>.
4. 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 maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.*) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use. This measure is not implemented. Performance scores are not provided.

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.

The literature suggests that approximately 50% of patients who are eligible for fibrinolytic therapy receive it, because their transfer time to a PCI-capable hospital exceeded 60 minutes; of those who receive fibrinolytic therapy, about 30% are appropriately administered the therapy within the guideline-recommended window of 30 minutes following ED arrival. Further, the median door-to-needle time for patients receiving fibrinolysis in advance of transfer to another facility for PCI is 34 minutes, which is outside the recommended window.

Performance data from CMS on OP-2 (Fibrinolytic Therapy Received within 30-minutes of ED Arrival) suggest there is an opportunity for facilities to improve the appropriate treatment for patients with STEMI who received fibrinolytic therapy in the ED. The data

indicate that, while facility-level OP-2 scores have improved since the measure was first implemented in the CMS Hospital OQR Program in 2010, performance is still highly variable. During the April 2012–March 2013 data collection period, performance scores ranged from 0% to 100%, with a weighted mean of 59.1% (that is, on average, 59.1% of STEMI patients who received fibrinolytic therapy did so within 30 minutes of ED arrival). For the April 2018 through March 2019 data collection period, performance scores also ranged from 14% to 100%, with the weighted mean rising to 70.4%. This translates to a 19.1% (or 11.3 percentage point) improvement in the weighted mean of OP-2 performance scores from April 2012 to March 2019.

Performance data from CMS on OP-3 (Median Time to Transfer to Another Facility for Acute Coronary Intervention) suggest there is an opportunity for facilities to improve the median time to transfer for acute coronary intervention. Though data indicate that, while facility-level OP-3 scores have improved since the measure was first implemented in the CMS Hospital OQR Program in 2010, performance is still highly variable. During the April 2012–March 2013 data collection period, performance scores ranged from 9 to 161 minutes, with a weighted mean of 62.73 minutes (that is, on average, 62.73 minutes passed from the time of ED admission to transfer for acute coronary intervention). For the April 2018 through March 2019 data collection period, performance scores ranged from 19 minutes to 106 minutes, but the weighted mean decreased to 54.22 minutes, which still lags existing guidelines. This translates to an 8.51-minute decrease (or 15.7 percentage points) in the weighted mean of OP-3 performance scores from April 2012 to March 2019.

REFERENCES:

1. Vora AN, Holmes DN, Rokos I, Roe MT, Granger CB, French WJ, Antman E, Henry TD, Thomas L, Bates ER, Wang TY. Fibrinolysis Use Among Patients Requiring Interhospital Transfer for ST-Segment Elevation Myocardial Infarction Care: A Report from the US National Cardiovascular Data Registry. *JAMA Intern Med.* 2015;175(2):207–215. doi:10.1001/jamainternmed.2014.6573.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., “topped out”, disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

This measure is not yet implemented. We are limited to data from two systems and consequently, cannot assess systematic disparities in care in using only the data from testing.

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

An analyses performed by Lewin of the 2014 data submitted to CMS’s clinical data warehouse (CDW) examined the impact of patient and facility characteristics on use of fibrinolysis using a logistic regression model for 3,844 cases. When compared to patients treated in facilities with fewer than 50 beds (a proxy for facility size), patients treated in facilities with 101 to 250 beds (OR=1.74, p=0.002) and 251 to 500 beds (OR=2.02, p=0.017) were significantly more likely receive fibrinolytic therapy within 30 minutes of ED arrival. Patients aged 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 or marginally significantly more likely than patients aged 18 to 30 to receive fibrinolytic therapy within 30 minutes of ED arrival. African-American patients were significantly less likely than their white peers to receive fibrinolytic therapy within 30 minutes of ED arrival (OR=0.60, p=0.001), as were Hispanic patients (OR=0.65, p=0.03), when compared to those patients of non-Hispanic origin. Finally, female patients were less likely than male patients receive fibrinolytic therapy within 30 minutes of ED arrival (OR=0.77, p< 0.001).

In addition to disparities in fibrinolytic therapy, the literature also suggests disparities in PCI. In a Get With the Guidelines study of 7,445 patients undergoing PCI for STEMI, after adjusting for confounders, African Americans were less likely to receive PCI within 90 minutes, when compared to their White counterparts (OR: 0.84; 95% confidence interval [CI]: 0.70-0.99; p=0.04) (Cavendar et al., 2013). Another study by Huded and colleagues found that women have higher D2B times than men (median D2B 112 minutes for women vs. 104 minutes for men, p=0.023) and higher proportion of women do not receive care in accordance to clinical guidelines (69% vs. 77%, P=0.019) (Huded et al., 2018). Door-in-door-out (DIDO) times for patients with STEMI have been found to be significantly longer for women (8.9 minutes longer than the mean), African Americans (9.1 minutes longer than the mean), and rural facilities (15.3 minutes longer than the mean) (Herrin et al., 2011).

REFERENCES:

1. Cavender MA, Rassi AN, Fonarow GC, Cannon CP, Peacock WF, Laskey WK, Hernandez AF, Peterson ED, Cox M, Grau-Sepulveda M, Schwamm LH & Bhatt DL (2013). Relationship of race/ethnicity with door-to-balloon time and mortality in patients undergoing primary percutaneous coronary intervention for ST-elevation myocardial infarction: findings from Get With the Guidelines-Coronary Artery Disease. *Clinical cardiology*, 36(12), 749–756. Available at: <https://doi.org/10.1002/clc.22213>.
2. Herrin J, Miller LE, Turkmani DF, Nsa W, Drye EE, Bernheim, SM, Ling SM, Rapp MT, Han LF, Bratzler DW, Bradley EH, Nallamothu BK, Ting HH, & Krumholz, HM. (2011). National performance on door-in to door-out time among patients transferred for primary percutaneous coronary intervention. *Archives of internal medicine*, 171(21), 1879–1886. Available at: <https://doi.org/10.1001/archinternmed.2011.481>.
3. Huded CP, Johnson M, Kravitz K, Menon V, Abdallah M, Gullett TC, Hantz S, Ellis SG, Podolsky SR, Meldon SW, Kralovic DM, Brosovich D, Smith E, Kapadia SR, & Khot UN. (2018). 4-Step Protocol for Disparities in STEMI Care and Outcomes in Women. *Journal of the American College of Cardiology*, 71(19), 2122–2132. Available at: <https://doi.org/10.1016/j.jacc.2018.02.039>.

2. Reliability and Validity—Scientific Acceptability of Measure Properties

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

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

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

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

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

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.)

Not applicable - the measure has not been posted on CMS's website.

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 an eMeasure Attachment: [STEMIeCQM_MATOutput_08262020-637453604397904411.zip](#)

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: [STEMIeCQM_ValueSets_08262020.xlsx](#)

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

No, this is not an instrument-based measure Attachment:

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

Not an instrument-based measure

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

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

N/A

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

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

ED STEMI patients aged 18 and older whose time from ED arrival to fibrinolysis is 30 minutes or fewer OR Non-transfer ED STEMI patients who received PCI at a PCI-capable hospital within 90 minutes of arrival OR ED STEMI patients who were transferred from a non-PCI capable hospital within 45 minutes of ED arrival at a non-PCI capable hospital.

S.5. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The numerator is defined by procedural, RxNorm, and SNOMEDCT codes included in the value sets for this measure; these detailed lists can be found in the value set Excel workbook attachment (see S.2b), as well as value sets published on the Value Set Authority Center (<https://vsac.nlm.nih.gov/authoring>). OIDs to the value sets for each numerator action are included, below:

Fibrinolytic Therapy within 30-minutes of ED Arrival OID: 2.16.840.1.113883.3.3157.4020

PCI within 90-minutes of ED Arrival for Non-Transfer Patients OID: 2.16.840.1.113883.3.3157.2000.5

Arrival Code

As determined by facility standard operating procedure (SOP)

Discharge to Another Facility Within 45-minutes of ED Arrival As determined by facility SOP

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

ED patients 18 years of age and older with STEMI who should have received appropriate and timely treatment for STEMI.

S.7. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The denominator is defined by E&M, SNOMEDCT, and ICD-10-CM diagnosis codes included in the value sets for this measure; these detailed lists can be found in the value set Excel workbook attachment (see S.2b), as well as value sets published on the Value Set Authority Center (<https://vsac.nlm.nih.gov/authoring>). OIDs to the value sets for the denominator are included, below:

Emergency Department Visit

OID: 2.16.840.1.113883.3.464.1003.101.12.1085

STEMI

OID: 2.16.840.1.113883.3.3157.4017

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

The denominator exclusions were derived from the 2013 ACCF/AHA Guideline for the Management of STEMI

(<http://www.onlinejacc.org/content/accj/61/4/e78.full.pdf?download=true>), which was also the basis of OP-2 (Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival) and OP-3 (Median Time to Transfer to Another Facility for Acute Coronary Intervention).

Denominator exclusions include the following conditions, which have to be documented as active in the patient's history at the time of the encounter: active bleeding or bleeding diathesis (excluding menses); ischemic stroke; known malignant intracranial neoplasm (primary or metastatic); known structural cerebral vascular lesion (e.g., AVM); significant facial and/or closed head trauma, any prior intracranial hemorrhage or other known intracranial pathology; suspected aortic dissection; active peptic ulcer; cardiopulmonary arrest; intubation; mechanical circulatory assist device placement; oral anticoagulant therapy prior to arrival (including streptokinase treatment); patients with advanced dementia; pregnancy; recent internal bleeding; recent major surgery; intracranial or intraspinal surgery, and severe neurologic impairment (based on Glasgow coma).

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

Specific details can be referenced in the value set Excel workbook attachment (see S.2b), as well as value sets published on the Value Set Authority Center (<https://vsac.nlm.nih.gov/authoring>). OIDs to the value sets for each exclusion are included, below:

The absolute contraindication denominator exclusions:

Active bleeding or bleeding diathesis (excluding menses)

OID: 2.16.840.1.113883.3.3157.4036

Intracranial or intraspinal surgery

OID: 2.16.840.1.113883.3.3157.4056

Ischemic stroke

OID: 2.16.840.1.113883.3.464.1003.104.12.1024

Known malignant intracranial neoplasm (primary or metastatic)

OID: 2.16.840.1.113883.3.3157.4009

OID: 2.16.840.1.113883.3.3157.4010

Known structural cerebral vascular lesion (e.g., AVM)

OID: 2.16.840.1.113883.3.3157.4025

Significant facial and/or closed head trauma, intracranial hemorrhage, or other known intracranial pathology

OID: 2.16.840.1.113883.3.3157.4026

Suspected aortic dissection

OID: 2.16.840.1.113883.3.3157.4028

Active peptic ulcer

OID: 2.16.840.1.113883.3.3157.4031

Cardiopulmonary arrest

OID: 2.16.840.1.113883.3.3157.4048

For streptokinase/anistreplase: prior exposure or prior allergic reaction to these agents

OID: 2.16.840.1.113883.3.3157.4059

Intubation

OID: 2.16.840.1.113762.1.4.1045.69

Mechanical circulatory assist device placement

OID: 2.16.840.1.113883.3.3157.4052

Oral anticoagulant therapy

OID: 2.16.840.1.113883.3.3157.4045

Patients with advanced dementia
OID: 2.16.840.1.113883.3.3157.4043

Pregnancy
OID: 2.16.840.1.113883.3.3157.4055

Recent internal bleeding
OID: 2.16.840.1.113883.3.3157.4036

Recent major surgery
OID: 2.16.840.1.113883.3.3157.4056

Severe neurologic impairment (based on Glasgow coma scale)
OID: 2.16.840.1.113883.3.3157.4058

S.10. Stratification Information (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)
Not applicable - this measure does not stratify its results.

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)
No risk adjustment or risk stratification
If other:

S.12. Type of score:
Other (specify):
If other: Percentage

S.13. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)
Better quality = Higher score

S.14. Calculation Algorithm/Measure Logic (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)
This measure calculates the percentage of ED patients with a STEMI diagnosis who received appropriate treatment (PCI, fibrinolytic therapy, transfer to PCI-capable hospital). The measure is calculated based on EHR data, as follows:
1. System check E/M Code; if E/M code represents care provided in the ED, proceed
2. Calculate Patient Age (Outpatient Encounter Date - Birthdate)
3. Patient Age >= 18, proceed
4. System check ICD-10-CM Principal Diagnosis Code;
5. Apply denominator exclusions to remove patients excluded from the measure denominator; all remaining cases are equal to the denominator count, proceed
6. System check Fibrinolytic Administration; if "Yes," proceed; if no
7. System check PCI Received; if "Yes," proceed; if no
8. System check Transferred for PCI; if "Yes," proceed;
9. System check Fibrinolytic Administration Date and Time; if a Non-Unable to Determine (UTD) value, proceed
10. System check Arrival Time; if a Non-UTD value, proceed
11. System calculates Time to Fibrinolysis (Fibrinolytic Administration Time minus Arrival Time)
12. System check Time to Fibrinolysis; if >= 0 min and <= 30 min, include in the numerator. If > 30 min and = 360 min or missing, proceed
13. System check PCI Received, Date and Time; if a Non-UTD value, proceed
14. System check Arrival Time; if a Non-UTD value, proceed
15. System calculate Time to PCI (PCI Procedure Time minus Arrival Time)

16. System check Time to PCI; if ≥ 0 min and ≤ 90 min, record as the numerator; if > 90 minutes and ≤ 360 min or missing, proceed
17. System check Transferred for PCI, check Transfer for PCI Date; if a Non-UTD value, proceed
18. System check Transfer for PCI Time; if a Non-UTD value, proceed
19. System check Arrival Time; if a Non-UTD value, proceed
20. System calculate Time to Transfer for PCI; if ≥ 0 min and ≤ 45 min, include in the numerator.
21. Measure = aggregated numerator counts / aggregated denominator counts [The value should be recorded as a percentage].

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

If an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed. This measure relies exclusively on electronic health record (EHR) data; sampling of beneficiaries is not required.

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

Specify calculation of response rates to be reported with performance measure results. This measure does not use survey data.

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

If other, please describe in S.18.

Electronic Health Records

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

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

This is not an instrument-based measure.

S.19. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

No data collection instrument provided

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

Facility

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

Outpatient Services

If other:

S.22. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

N/A

2. Validity – See attached Measure Testing Submission Form

STEMIeCQM_NQFTestingAttach_v1.0-637453608766224975.docx

2.1 For maintenance of endorsement

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

2.2 For maintenance of endorsement

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

2.3 For maintenance of endorsement

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

3. Feasibility

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

3a. Byproduct of Care Processes

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

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

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score)

If other:

3b. Electronic Sources

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

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

ALL data elements are in defined fields in electronic health records (EHRs)

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment: [STEMIeCQM_NQFFeasibilityScorecard_08262020.xlsx](#)

3c. Data Collection Strategy

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

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

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

This measure has not yet been implemented, so no difficulties in data collection have been identified.

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 2017 American Medical Association. All rights reserved. CPT® is a registered trademark of the American Medical Association. Applicable FARS\DFARS Restrictions Apply to Government Use. Fee schedules, relative value units, conversion factors, and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

4. Usability and Use

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

4a. Accountability and Transparency

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

4.1. Current and Planned Use

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

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	
Quality Improvement (external benchmarking to organizations)	
Not in use	

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

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

This is a new measure that has not been implemented.

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

This is a new measure that has not been implemented. The measure is intended for use at the facility level in an accountability program where it may be publicly reported.

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

The measure is intended for use by CMS in an accountability program, such as the Hospital OQR Program, where it may be publicly reported. The measure's intended audience includes healthcare consumers, ED physicians and cardiologists, and ancillary medical staff, researchers, and ancillary staff (such as emergency medical services, 911 dispatch, administrators, and measure developers).

The measure was reviewed by the Measure Applications Partnership (MAP) in December 2020. The Rural Health Workgroup agreed the measure is suitable for use with rural providers under the HOQR program. During the MAP public comment period, the Society for Cardiovascular Angiography and Interventions (SCAI) noted the measure would “add value and improve patient outcomes that will likely become a de facto standard of care in this highly complex area.” University of Colorado Medicine and AdvaMed also supported the measure, and the Federation of American Hospitals and American Medical Association conditionally supported the measure. Ultimately, the MAP offered conditional support for rulemaking pending NQF endorsement.

CMS will make a determination on whether and how to roll out this measure in consideration of MAP feedback and evaluation of appropriateness for inclusion in relevant rulemaking.

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

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

This measure is not yet publicly reported. Data on usability was collected via qualitative interview at two sites that field tested the measure. As part of the interviews, nine clinical and administrative staff were asked key questions about the measure’s usability and attribution, including:

- Do providers see value in treatment for STEMI patients in the ED?
- Are there unintended consequences associated with implementation of this measure?
- How will facilities use information from the measure to improve quality and efficiency of care?
- What current and future challenges exist in implementing the measure?
- Do providers think the measure should be attributed to an individual provider or a facility?

Following implementation of the measure in a CMS accountability program, performance scores may be publicly reported with the opportunity for ongoing stakeholder feedback. Feedback received from stakeholder Q&A and data from public reporting will be used to reevaluate the measure specifications annually.

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

Not applicable—this measure has not yet been implemented.

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

Describe how feedback was obtained.

When addressing provider usability and the potential impact of the STEMI eCQM on quality of care, participants from both sites indicated that the measure’s results would be useful and are consistent with internal performance metrics currently in use. Respondents indicated that they did not foresee any negative unintended consequences to measure implementation, other than potential changes in workflow to record the data elements in a form that can more easily be electronically extracted. Those with whom the measure developer spoke did not have concerns about interpretation of STEMI eCQM’s measure scores. Aside from ED physicians and cardiologists, participants suggested that other ancillary medical staff and researchers—such as emergency medical services (EMS), 911 dispatch, administrator, and measure developers—may find the measure useful.

Both sites agreed that they would participate in optional reporting of this measure. All participants thought that the measure would be useful to patients, though there was variability on whether performance scores would influence consumer decision-making; some participants felt that patients were less likely to make decisions based on facility performance for emergent care.

All participants with whom the measure developer spoke supported public reporting of the STEMI eCQM at the facility level, given the multiple points of care impacted by performance, including system influences that are beyond one provider’s control. Participants stated that provider-level performance scores could be used for internal quality improvement; given external confounders, however, reporting a single provider’s performance would not be appropriate to report publicly.

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

Not applicable; this measure has not yet been implemented.

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

Not applicable; this measure has not yet been implemented.

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

Overall, interview participants from both sites believe that the face validity, feasibility, usability, and attribution of the STEMI eCQM were adequate, though there were opportunities for refinements. Based on feedback received during testing of the measure, updates were made to the specifications to add greater specificity for definitions of several data elements, including ED Arrival Time, Time to PCI, and STEMI; limit the list of exclusions to only those captured during the patient encounter's in the ED (i.e., remove the look-back periods); and, remove exclusions that are unlikely to impact the time to treatment for emergent conditions such as STEMI (such as hypertension and patient refusal).

Improvement

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

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

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

As a new measure, this measure has yet to be used in any long-term reporting programs that could be used to observe improvement.

4b2. Unintended Consequences

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

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

This is a new measure and as such, there are no unexpected findings to report based on implementation of the measure.

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

Not applicable; this measure has not yet been implemented.

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)

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

*Note: this measure is related to NQF #2377 - Overall Defect Free Care for AMI (NQF #2377)—American College of Cardiology. This was not coming up as an option for 5.1a, so we have included this measure in this section.

Median Time to Fibrinolysis—CMS

Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival—CMS

Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival (OP-2)—CMS

Primary PCI Received within 90 Minutes of Hospital Arrival—CMS

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

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

Are the measure specifications harmonized to the extent possible?

Yes

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

The STEMI eCQM expands on the OP-2 (Fibrinolytic Therapy Received within 30 Minutes of ED Arrival) measure by including other forms of treatments appropriate for ED AMI patients with STEMI. OP-2 specifically measures the delivery of fibrinolytic therapy while the STEMI eCQM also captures PCI treatment and transfer. Further, while both OP-2 and OP-3 (Median Time to Transfer to Another Facility for ACI) focus on the timeliness of care, the STEMI eCQM also examines the appropriate treatments administered for STEMI patients presenting to the ED. Though the STEMI eCQM is intended to eventually replace OP-2 and OP-3, the three measures align where possible (like the interventions considered for treatment, time to treatment, and denominator exclusions). Although these measures are aligned to the extent feasible, the STEMI eCQM relies on electronic health record data that would measure all eligible STEMI patients eligible for treatment, whereas OP-2 and OP-3 are chart-abstracted measures that rely on sampled data. The related measure NQF #2377 (Overall Defect Free Care for AMI), stewarded by the American College of Cardiology, measures the proportion of acute myocardial infarction patients aged above 18 years who receive optimal care based upon their eligibility for each performance measure. The measure concept of appropriate care for STEMI patients aligns with the STEMI eCQM concept; the measure population and settings of care, however, differ. For the STEMI eCQM, patients in the ED setting are included in the measure, whereas NQF #2377 evaluates both STEMI and non-STEMI patients in the inpatient setting. Further, the related measure NQF #2377 is a composite measure that evaluates variables beyond time to fibrinolytics and PCI.

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.)

The STEMI eCQM does not conceptually address both the same measure focus and the same target population as NQF-endorsed measure(s).

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.

No appendix Attachment:

Contact Information
<p>Co.1 Measure Steward (Intellectual Property Owner): Centers for Medicare & Medicaid Services (CMS)</p> <p>Co.2 Point of Contact: Janis, Grady, janis.grady@cms.hhs.gov, 410-786-7217-</p> <p>Co.3 Measure Developer if different from Measure Steward: Yale/Yale New Haven Health System Center for Outcomes Research and Evaluation (CORE)</p> <p>Co.4 Point of Contact: Faseeha, Altaf, faseeha.altaf@yale.edu, 860-752-5471-</p>
Additional Information
<p>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.</p> <ol style="list-style-type: none"> 1. Joseph Drozda, MD, Director of Outcomes Research, Mercy Hospital, Chesterfield, MO 2. M. Shazam Hussain, MD, Director, Cerebrovascular Center, Cleveland Clinic, Cleveland, OH 3. Wato Nsa, MS, PhD, MPH, Director of Analytics, Oklahoma Foundation for Medical Quality, Oklahoma City, OK 4. Cathy Olson, MSN, RN, Director, Institute for Quality, Safety, and Injury Prevention, Emergency Nurses Association, Plaines, IL 5. Robin Olson, Co-Champion, WomenHeart, Downing, PA 6. Stephen Traub, MD, Chairman, Department of Emergency Medicine, Mayo Clinic, Phoenix, AZ 7. Janet Wagner, BSN, MS-OLQ, CPHQ, Quality Services Senior Manager, Rural Wisconsin Health Cooperative, Sauk City, WI 8. Carla Brock Wilber, RN, DNP, NE-BC, Senior Consultant, Stroudwater Associates, Portland, ME 9. Matt Zavadsky, MS-HAS, HAS, Chief Strategic Integration Officer, MedStar Mobile Healthcare, Worth, TX
<p>Measure Developer/Steward Updates and Ongoing Maintenance</p> <p>Ad.2 Year the measure was first released:</p> <p>Ad.3 Month and Year of most recent revision:</p> <p>Ad.4 What is your frequency for review/update of this measure? N/A</p> <p>Ad.5 When is the next scheduled review/update for this measure?</p>
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<p>Ad.8 Additional Information/Comments: N/A</p>