

****NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE****

Measure Information Form

Measure Set: Acute Myocardial Infarction (AMI)

Set Measure ID#: AMI-8a

Performance Measure Name: Primary PCI Received Within 90 Minutes of Hospital Arrival

Description: Acute myocardial infarction (AMI) patients receiving percutaneous coronary intervention (PCI) during the hospital stay with a time from hospital arrival to PCI of 90 minutes or less

Rationale: The early use of primary angioplasty in patients with acute myocardial infarction who present with ST-segment elevation or LBBB results in a significant reduction in mortality and morbidity. The earlier primary coronary intervention is provided, the more effective it is (Brodie, 1998 and DeLuca, 2004). National guidelines recommend the prompt initiation of PCI in patients presenting with ST-elevation myocardial infarction (Antman, 2004). Despite these recommendations, few eligible older patients hospitalized with AMI receive primary angioplasty within a timely manner (Jencks, 2000).

Type of Measure: Process

Improvement Noted as: An increase in the rate

Numerator Statement: AMI patients whose time from hospital arrival to PCI is 90 minutes or less

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:

- *Arrival Date*
- *Arrival Time*
- *First PCI Date*
- *First PCI Time*

Denominator Statement: AMI patients with ST-elevation or LBBB on ECG who received PCI

Included Populations: Discharges with:

- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, Table 1.1
AND
- PCI (*ICD-9-CM Principal and Other Procedure Codes* for PCI as defined in Appendix A, Table 1.2)
AND
- ST-segment elevation or LBBB on the ECG performed closest to hospital arrival
AND
- PCI performed within 24 hours after hospital arrival

Excluded Populations:

- Patients less than 18 years of age
- Patients received in transfer from an acute care facility where they were an inpatient or outpatient
- Patients received as a transfer from one distinct unit of the hospital to another distinct unit of the same hospital
- Patients received as a transfer from an emergency department of another hospital
- Patients with comfort measures only documented by a physician/advanced practice nurse/physician assistant (physician/APN/PA)
- Patients involved in clinical trials
- Patients administered fibrinolytic agent prior to PCI
- PCI described as non-primary by a physician/APN/PA
- Patients who did not receive PCI within 90 minutes and had a reason for delay documented by a physician/APN/PA (e.g., social, religious, initial concern or refusal, cardiopulmonary arrest)

Data Elements:

- *Admission Date*
- *Arrival Date*
- *Arrival Time*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Fibrinolytic Administration*
- *First PCI Date*
- *First PCI Time*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Principal Procedure Code*

- *Initial ECG Interpretation*
- *Non-Primary PCI*
- *Point of Origin for Admission or Visit*
- *Reason for Delay in PCI*
- *Transfer From Another ED*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

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

Measure Analysis Suggestions: The measure rate for primary PCI received within 90 minutes of hospital arrival should be analyzed in conjunction with the median time to primary PCI measure (AMI-8). These measures, used together, will assist in understanding the number of AMI patients that are receiving primary PCI within 90 minutes of hospital arrival, and will identify the hospital's median time to primary PCI and potential opportunities for improvement to increase the rate of patients receiving primary PCI in 90 minutes or less.

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

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

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at www.acc.org/clinical/guidelines/stemi/index.pdf
- Brodie BR, Stuckey TD, Wall TC, Kissling G, Hansen CJ, Muncy DB, Weintraub RA, Kelly TA. Importance of time to reperfusion for 30-day and late survival and recovery of left ventricular function after primary angioplasty for acute myocardial infarction. *J Am Coll Cardiol*. 1998;32:1312-9.
- DeLuca G, Suryapranata H, Ottervanger JP, Antman EM. Time delay to treatment and mortality in primary angioplasty for acute myocardial infarction: every minute of delay counts. *Circulation* 2004; 109(10):1223-1225.
- Jencks SJ, Cuerdon T, Burwen DR, Fleming B, Houck PM, Kussmaul AE, Nilasena DS, Ordin DL, Arday DR. Quality of medical care delivered to Medicare beneficiaries: a profile at state and national levels. *JAMA*. 2000;284:1670-1676.
- Krumholz HM, Anderson JL, Brooks NH, Fesmire FM, Lambrew CT, Landrum MB, Weaver

WD, Whyte J. ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: a report of the ACC/AHA Task Force on Performance Measures (ST-Elevation and Non-ST-Elevation Myocardial Infarction Performance Measures Writing Committee). J Am Coll Cardiol 2006;47:236–65. Available at <http://www.acc.org> and <http://www.americanheart.org>.

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Denominator: AMI patients with ST-elevation or LBBB on ECG who received PCI.

Variable Key:
Time to PCI





