

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 with ST-segment elevation on the ECG closest to arrival time receiving primary 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 ST-segment myocardial infarction (STEMI) results in a significant reduction in mortality and morbidity. The earlier primary coronary intervention is provided, the more effective it is (Brodie, 1998 and DeLuca, 2004). National guidelines recommend the prompt initiation of PCI in patients presenting with ST-elevation myocardial infarction (O’Gara, 2013 and Levine, 2011).

Type of Measure: Process

Improvement Noted as: An increase in the rate

Numerator Statement: AMI patients whose time from hospital arrival to primary 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 on ECG who received primary 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 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 who have a Length of Stay greater than 120 days
- Patients enrolled in clinical trials
- Patients received as a transfer from an inpatient or outpatient department of another hospital
- Patients received as a transfer from the emergency/observation department of another hospital
- Patients received as a transfer from an ambulatory surgery center
- Patients administered fibrinolytic agent prior to PCI
- PCI described as non-primary by a physician/advanced practice nurse/physician assistant (physician/APN/PA)
- Patients who did not receive PCI within 90 minutes and had a documented Reason for Delay in PCI

Data Elements:

- *Admission Date*
- *Arrival Date*
- *Arrival Time*
- *Birthdate*
- *Clinical Trial*
- *Discharge Date*
- *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*
- *Reason for Delay in PCI*
- *Transfer From Another Hospital or ASC*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical record documents. Some hospitals may prefer

to gather data concurrently by identifying patients in the population of interest. This approach provides opportunities for improvement at the point of care/service. However, complete documentation includes the principal or other ICD-9-CM diagnosis and procedure codes, which require retrospective data entry.

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

Measure Analysis Suggestions: The measure rate for primary PCI received within 90 minutes of hospital arrival may be analyzed in conjunction with the median time to primary PCI measure (AMI-8). These measures, used together, can assist in understanding the number of AMI patients that are receiving primary PCI within 90 minutes of hospital arrival, and can 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, please refer to the measure set specific sampling requirements and for additional information see the Population and Sampling Specifications section.

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

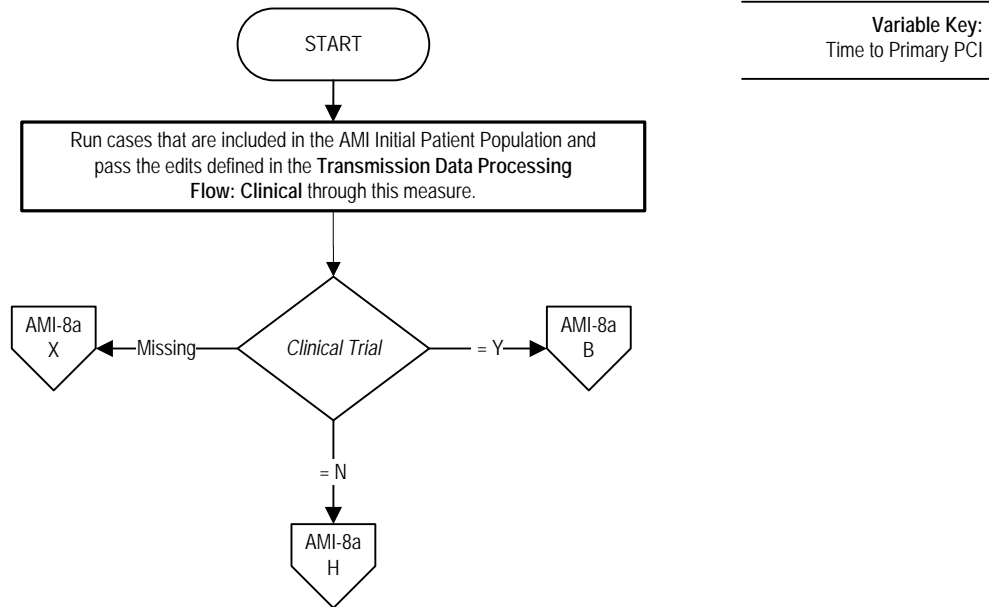
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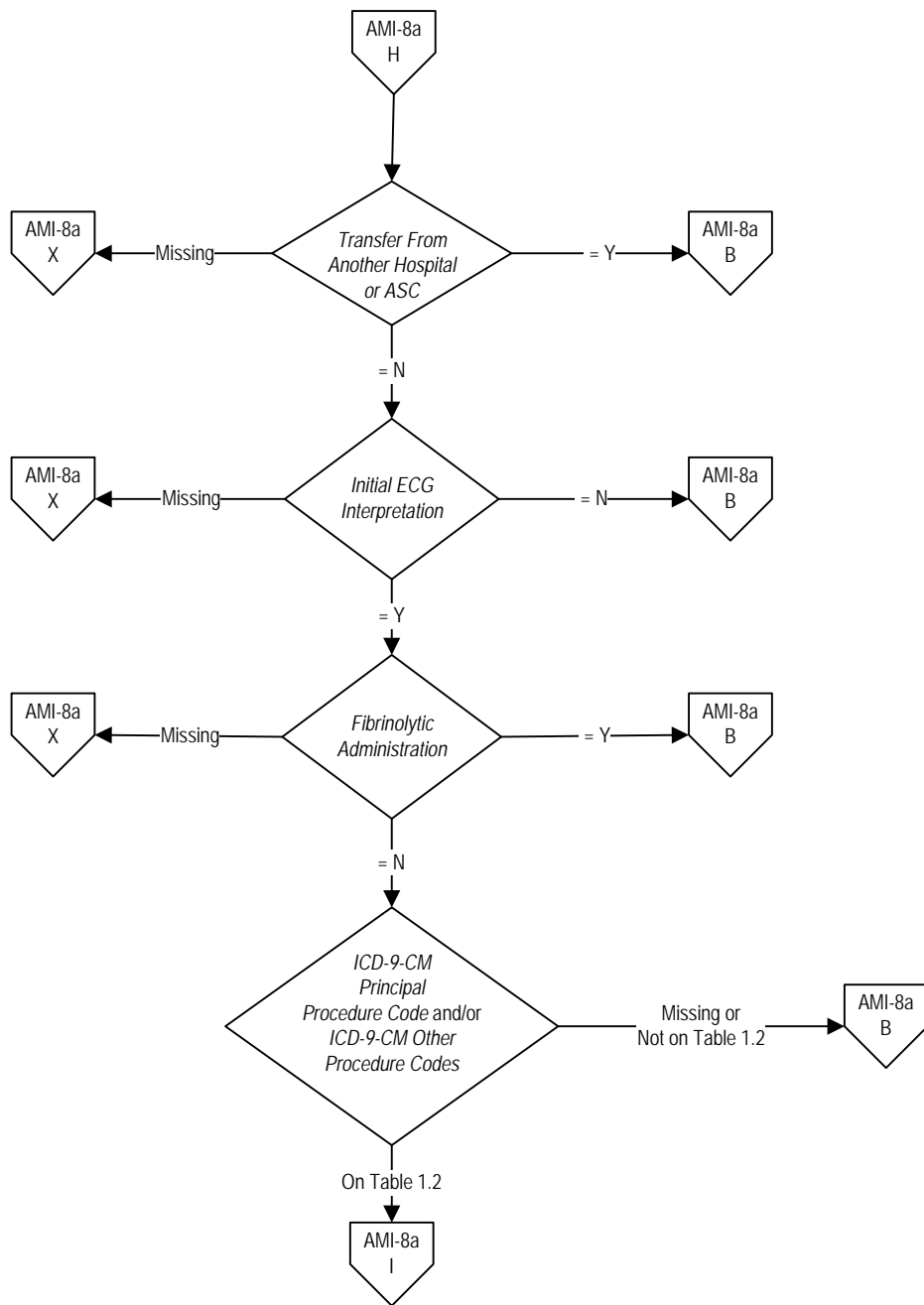
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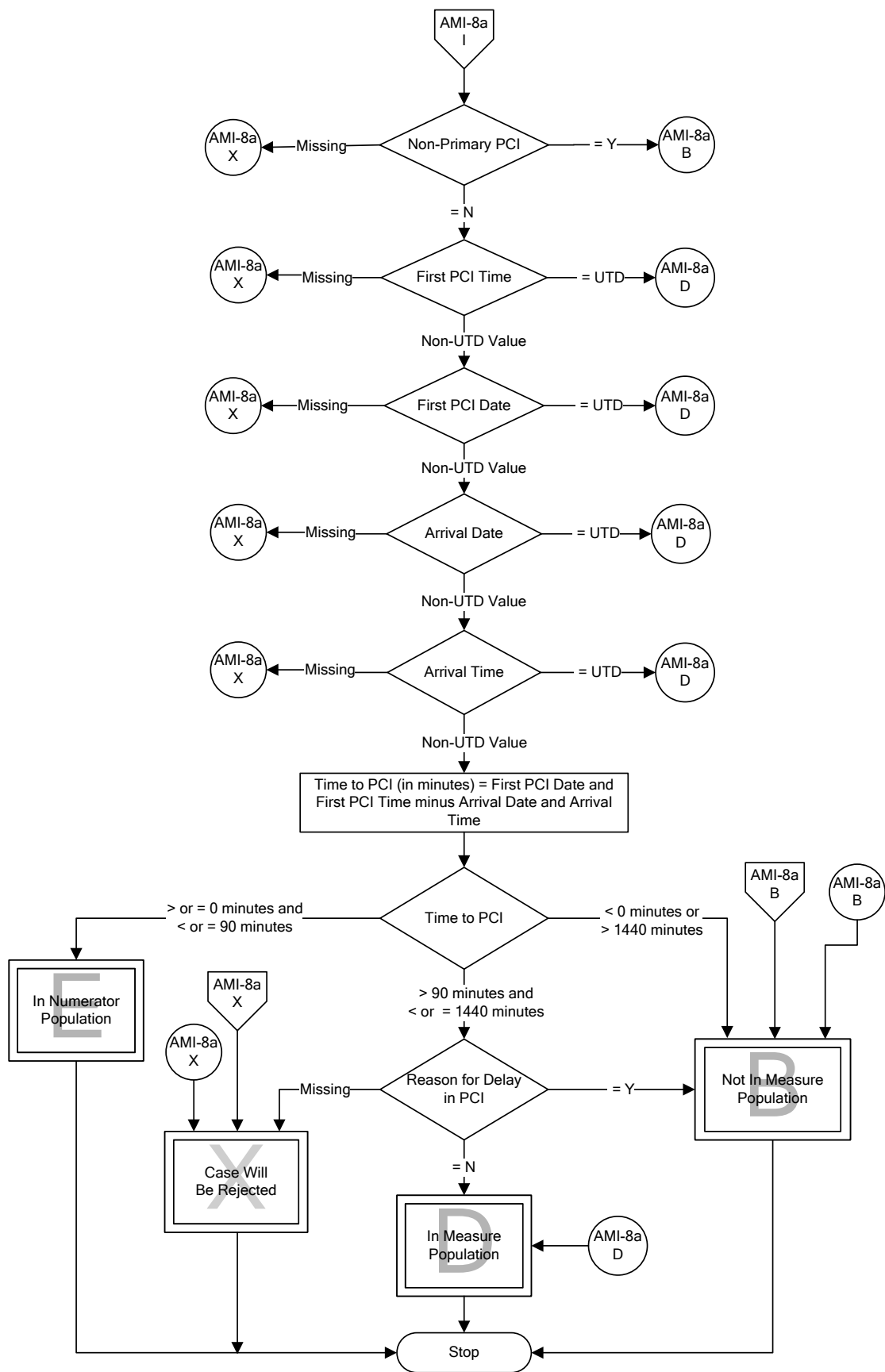
AMI-8a: Primary PCI Received Within 90 Minutes of Hospital Arrival

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

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







Acute Myocardial Infarction (AMI)-8a: Primary Percutaneous Coronary Intervention (PCI) Received Within 90 Minutes of Hospital Arrival

Numerator: Acute Myocardial Infarction (AMI) patients whose time from hospital arrival to primary PCI is 90 minutes or less.

Denominator: AMI patients with ST-elevation on Electrocardiogram (ECG) who received Primary PCI.

Variable Key: Time to Primary PCI

1. Start processing. Run cases that are included in the AMI Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2. Check Clinical Trial
 - a. If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
 - c. If Clinical Trial equals No, continue processing and proceed to Transfer From Another Hospital or ASC.
3. Check Transfer From Another Hospital or ASC
 - a. If Transfer From Another Hospital or ASC is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Transfer From Another Hospital or ASC equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Transfer From Another Hospital or ASC equals No, continue processing and proceed to Initial ECG Interpretation.
4. Check Initial ECG Interpretation
 - a. If Initial ECG Interpretation is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Initial ECG Interpretation equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Initial ECG Interpretation equals Yes, continue processing and proceed to Fibrinolytic Administration.
5. Check Fibrinolytic Administration
 - a. If Fibrinolytic Administration is missing, the case will proceed to a Measure

- Category Assignment of X and will be rejected. Stop processing.
- b. If Fibrinolytic Administration equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Fibrinolytic Administration equals No, continue processing and proceed to ICD-9-CM Principal Procedure Code and/or ICD-9-CM Other Procedure Codes.
6. Check ICD-9-CM Principal Procedure Code and/or ICD-9-CM Other Procedure Codes
- a. If the ICD-9-CM Principal Procedure Code and/or ICD-9-CM Other Procedure Codes is missing or not on Table 1.2, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - b. If the ICD-9-CM Principal Procedure Code and/or ICD-9-CM Other Procedure Codes are on Table 1.2, continue processing and proceed to Non-Primary PCI.
7. Check Non-Primary PCI
- a. If Non-Primary PCI is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Non-Primary PCI equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Non-Primary PCI equals No, continue processing and proceed to First PCI Time.
8. Check First PCI Time
- a. If First PCI Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If First PCI Time equals Unable to Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
 - c. If First PCI Time equals a Non Unable to Determine value, continue processing and proceed to First PCI Date.
9. Check First PCI Date
- a. If First PCI Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If First PCI Date equals Unable to Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
 - c. If First PCI Date equals a Non Unable to Determine value, continue processing and proceed to Arrival Date.

10. Check Arrival Date
 - a. If Arrival Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Arrival Date equals Unable to Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
 - c. If Arrival Date equals a Non Unable to Determine value, continue processing and proceed to Arrival Time.

11. Check Arrival Time
 - a. If Arrival Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Arrival Time equals Unable to Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
 - c. If Arrival Time equals a Non Unable to Determine value, continue processing and proceed to Time to PCI calculation.

12. Calculate Time to PCI. Time to PCI, in minutes, is equal to the First PCI Date and First PCI Time minus the Arrival Date and Arrival Time.

13. Check Time to PCI
 - a. If the Time to PCI is less than zero minutes or greater than 1440 minutes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - b. If the Time to PCI is greater than or equal to zero minutes and less than or equal to 90 minutes, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing.
 - c. If the Time to PCI is greater than 90 minutes and less than or equal to 1440 minutes, continue processing and proceed to Reason for Delay in PCI.

14. Check Reason for Delay in PCI
 - a. If Reason for Delay in PCI is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Reason for Delay in PCI is Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Reason for Delay in PCI is No, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.