NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form

Measure Set: Acute Myocardial Infarction (AMI)

Set Measure ID#: AMI-7a

Performance Measure Name: Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival

Description: Acute myocardial infarction (AMI) patients with ST-segment elevation on the ECG closest to arrival time receiving fibrinolytic therapy during the hospital stay and having a time from hospital arrival to fibrinolysis of 30 minutes or less.

Rationale: Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-elevation myocardial infarction (O'Gara, 2013).

Type of Measure: Process

Improvement Noted as: An increase in the rate

Numerator Statement: AMI patients whose time from hospital arrival to fibrinolysis is 30 minutes or less.

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:

- *Arrival Date*
- *Arrival Time*
- *Fibrinolytic Administration Date*
- *Fibrinolytic Administration Time*

Denominator Statement: AMI patients with ST-elevation on ECG who received fibrinolytic therapy.

Included Populations: Discharges with:

- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, Table 1.1

AND

- ST-segment elevation on the ECG performed closest to hospital arrival

AND

- Fibrinolytic therapy within 6 hours after hospital arrival

AND

- Fibrinolytic therapy is primary reperfusion therapy

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 who did not receive fibrinolytic therapy within 30 minutes and had a documented *Reason for Delay in Fibrinolytic Therapy*

Data Elements:

- *Admission Date*
- *Arrival Date*
- *Arrival Time*
- *Birthdate*
- *Clinical Trial*
- *Discharge Date*
- *Fibrinolytic Administration*
- *Fibrinolytic Administration Date*
- *Fibrinolytic Administration Time*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial ECG Interpretation*
- *Reason for Delay in Fibrinolytic Therapy*
- *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 fibrinolytic agent received within 30 minutes of hospital arrival may be analyzed in conjunction with the median time to fibrinolysis measure (AMI-7). These measures, used together, can assist in understanding the number of AMI patients that are receiving fibrinolysis within 30

minutes of hospital arrival and can identify the hospital's median time to fibrinolysis and potential opportunities for improvement to increase the rate of patients receiving fibrinolysis in 30 minutes or less.

Sampling: Yes, 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

Selected References:

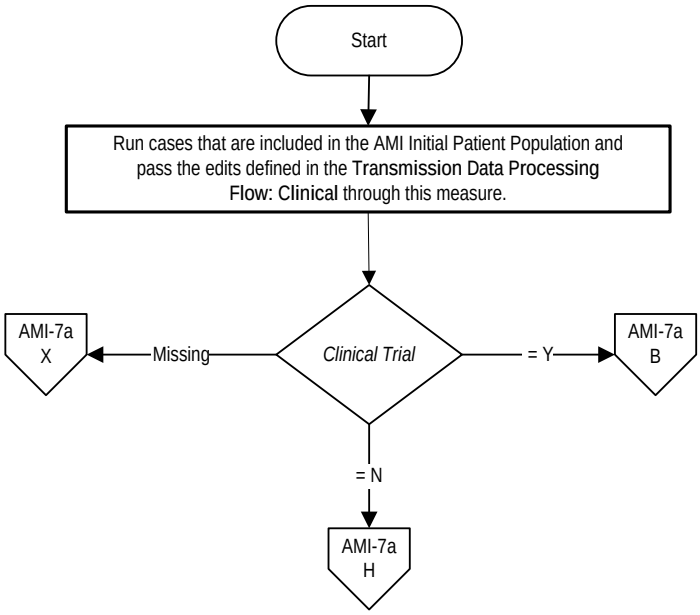
- Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. *Lancet.* 1994;343:311-22.
- Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non–ST-Elevation Myocardial Infarction). *J Am Coll Cardiol.* 2008;52:2046 –99.
- O'Gara PT, Kushner FG, Ascheim DD, Casey DE, Jr, Chung MK, de Lemos JA, et al. 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;61:485–510.

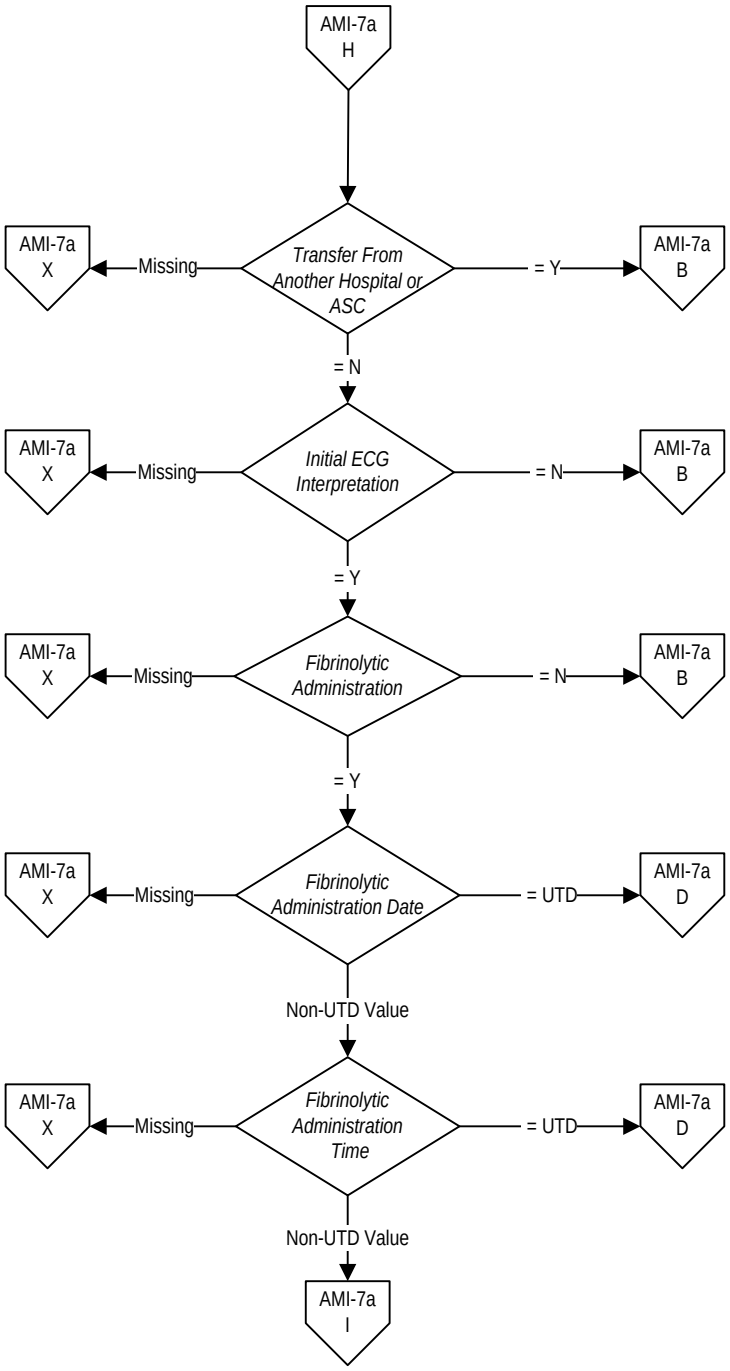
AMI-7a: Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival

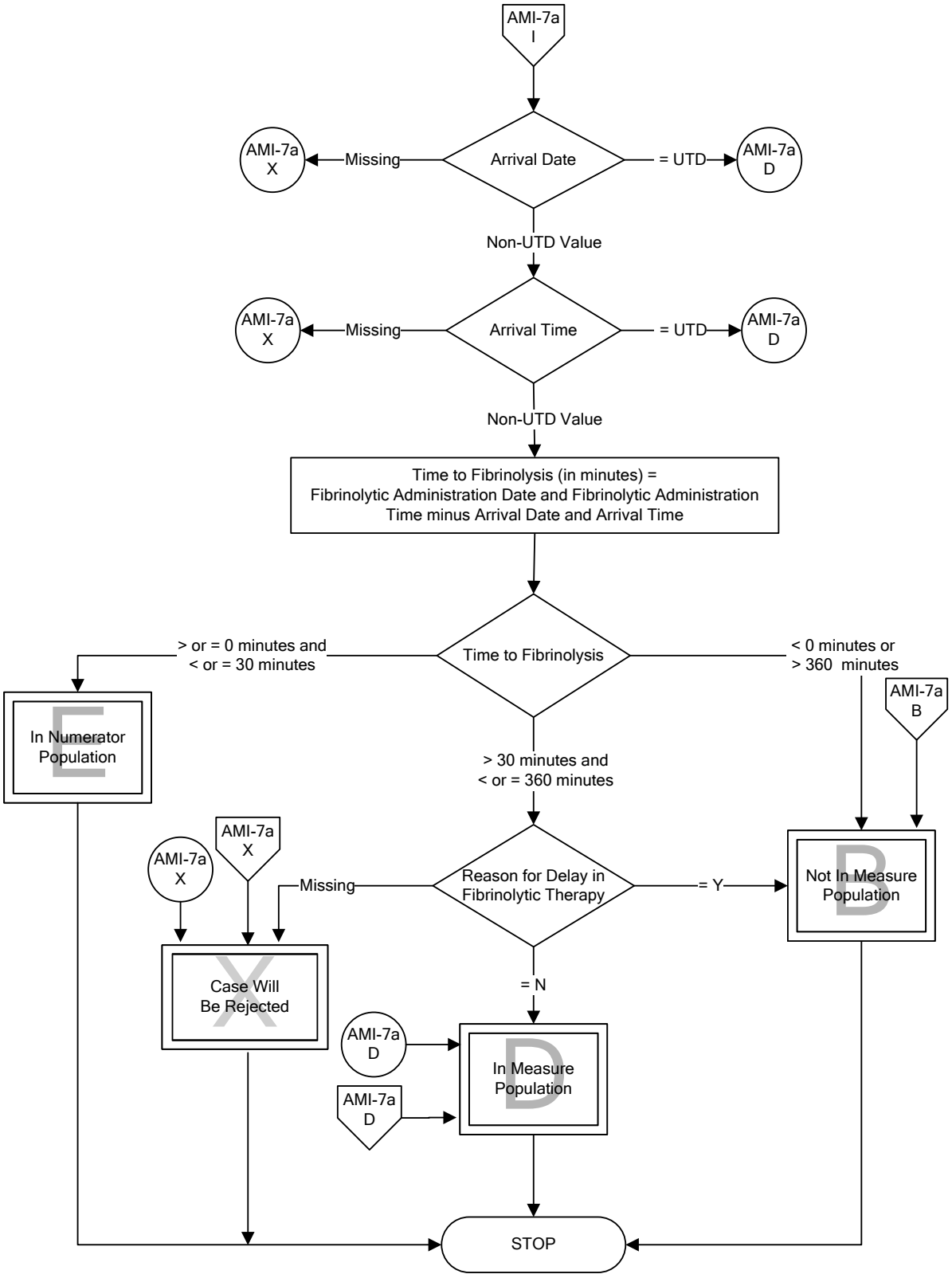
Numerator: AMI patients whose time from hospital arrival to fibrinolysis is 30 minutes or less.

Denominator: AMI patients with ST-elevation on ECG who received fibrinolytic therapy.

Variable Key:
Time to Fibrinolysis




AMI-7a H
Transfer From Another Hospital or ASC
Missing
AMI-7a X
= Y
AMI-7a B
= N
Initial ECG Interpretation
Missing
AMI-7a X
= N
AMI-7a B
= Y
Fibrinolytic Administration
Missing
AMI-7a X
= N
AMI-7a B
= Y
Fibrinolytic Administration Date
Missing
AMI-7a X
= UTD
AMI-7a D
Non-UTD Value
Fibrinolytic Administration Time
Missing
AMI-7a X
= UTD
AMI-7a D
Non-UTD Value
AMI-7a I


AMI-7a I
Arrival Date
Missing
AMI-7a X
= UTD
AMI-7a D
Non-UTD Value
Arrival Time
Missing
AMI-7a X
= UTD
AMI-7a D
Non-UTD Value
Time to Fibrinolysis (in minutes) = Fibrinolytic Administration Date and Fibrinolytic Administration Time minus Arrival Date and Arrival Time
Time to Fibrinolysis
> or = 0 minutes and < or = 30 minutes
In Numerator Population
E
< 0 minutes or > 360 minutes
AMI-7a B
> 30 minutes and < or = 360 minutes
Reason for Delay in Fibrinolytic Therapy
Missing
AMI-7a X
AMI-7a X
= Y
Not In Measure Population
B
Case Will Be Rejected
X
= N
AMI-7a D
AMI-7a D
In Measure Population
D
STOP

Acute Myocardial Infarction (AMI)-7a: Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival

Numerator: Acute Myocardial Infarction (AMI) patients whose time from hospital arrival to fibrinolysis is 30 minutes or less.

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

Variable Key: Time to Fibrinolysis

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 No, 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 Yes, continue processing and proceed to Fibrinolytic Administration Date.

6. Check Fibrinolytic Administration Date
    a. If Fibrinolytic Administration Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
    b. If Fibrinolytic Administration 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 Fibrinolytic Administration Date equals a Non Unable to Determine value, continue processing and proceed to Fibrinolytic Administration Time.

7. Check Fibrinolytic Administration Time
    a. If Fibrinolytic Administration Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
    b. If Fibrinolytic Administration 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 Fibrinolytic Administration Time equals a Non Unable to Determine value, continue processing and proceed to Arrival Date.

8. 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.

9. 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 Fibrinolysis calculation.

10. Calculate Time to Fibrinolysis. Time to Fibrinolysis, in minutes, is equal to the Fibrinolytic Administration Date and Fibrinolytic Administration Time minus the Arrival Date and Arrival Time.

11. Check Time to Fibrinolysis
    a. If the Time to Fibrinolysis is less than zero minutes or greater than 360 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 Fibrinolysis is greater than or equal to zero minutes and less than or equal to 30 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 Fibrinolysis is greater than 30 minutes and less than or equal to 360 minutes, continue processing and proceed to Reason for Delay in Fibrinolytic Therapy.

12. Check Reason for Delay in Fibrinolytic Therapy
    a. If Reason for Delay in Fibrinolytic Therapy is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
    b. If Reason for Delay in Fibrinolytic Therapy 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 Fibrinolytic Therapy is No, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.