

ED AMI TRANSFER MEASURES

A review of proposed measures



5 DRAFT ED AMI Measures

- Approved by a technical expert panel
- The Joint Commission alignment process is pending
- Pilot testing is on-going
- No final rule published



5 DRAFT ED AMI Measures

1. ED Aspirin at Arrival
2. ED Median Time to Fibrinolysis
3. ED Fibrinolytic Therapy received Within 30 Minutes of ED Arrival
4. ED Median Time to ECG
5. ED Median Time to Transfer to Another Facility for Primary PCI



ED Aspirin at Arrival

- **Description:** Emergency Department acute myocardial infarction (AMI) patients or chest pain patients (with a probable AMI) without aspirin contraindications who received aspirin within 24 hours before ED arrival or prior to transfer.



ED Aspirin at Arrival

- Aspirin therapy provides a percent reduction in mortality that is comparable to thrombolytic therapy ⁽¹⁾
- Also effective in patients with non-ST-elevation myocardial infarction ⁽²⁾

1. Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. *Lancet*. 1988 Aug 13;2(8607):349-60
2. Theroux P, Ouimet H, McCans J et al. Aspirin, heparin, or both to treat acute unstable angina. *N Engl J Med* 1988; 319(17):1105-1111



ED Aspirin at Arrival

- **Rationale:** The early use of aspirin in patients with acute myocardial infarction results in a significant reduction in adverse events and subsequent mortality.



ED AMI 1

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

Braunwald E, Antman EM, Beasley JW, Califf RM, Cheitlin MD, Hochman JS, Jones RH, Kereiakes D, Kupersmith J, Levin TN, Pepline CJ, Schaeffer JW, Smith EE III, Steward DE, Theroux P. ACC/AHA 2002 guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the Management of Patients with Unstable Angina). 2002. Available at www.acc.org/clinical/guidelines/unstable/unstable.pdf



ED AMI 1

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>. www.acc.org/clinical/guidelines/stemi/index.pdf

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.

Risk of myocardial infarction and death during treatment with low dose aspirin and intravenous heparin in men with unstable coronary artery disease. The RISC Group. *Lancet* 1990; 336(8719):827-830.



ED AMI 1

- **Denominator** would include Emergency Department AMI or Chest Pain patients (with a probable AMI) without aspirin contraindications.

Numerator would include those patients in the denominator who received aspirin within 24 hours before ED arrival or prior to transfer.

Excluded Populations

- Less than 18 years of age
- Transferred from another acute care hospital including emergency rooms
- Expired in the emergency department
- Left against medical advice (AMA)
- Receiving Comfort Measures Only (CMO)
- Have a contraindication to aspirin



12 Data Elements

- ◆ 2 determine the numerator
 - » *ED-AMI Aspirin Received*
 - ❖ *ED-AMI Probable AMI*
- ◆ All 12 determine the denominator
 - » *ED-AMI Admission Source*
 - » *ED-AMI Aspirin Received*
 - » *ED-AMI Arrival Date*
 - » *ED-AMI Birthdate*
 - » *ED-AMI Comfort Measures Only*
 - » *ED-AMI Contraindication to Aspirin on Arrival*
 - » *ED-AMI Discharge Date*
 - » *ED-AMI Discharge Status*
 - » *ED-AMI ICD-9-CM Other Diagnosis Code*
 - » *ED-AMI ICD-9-CM Principal Diagnosis Code*
 - ❖ *ED-AMI Probable AMI*
 - » *ED-AMI Transfer From Another ED*

ED AMI 1

DATA ELEMENTS

ED-AMI Probable AMI

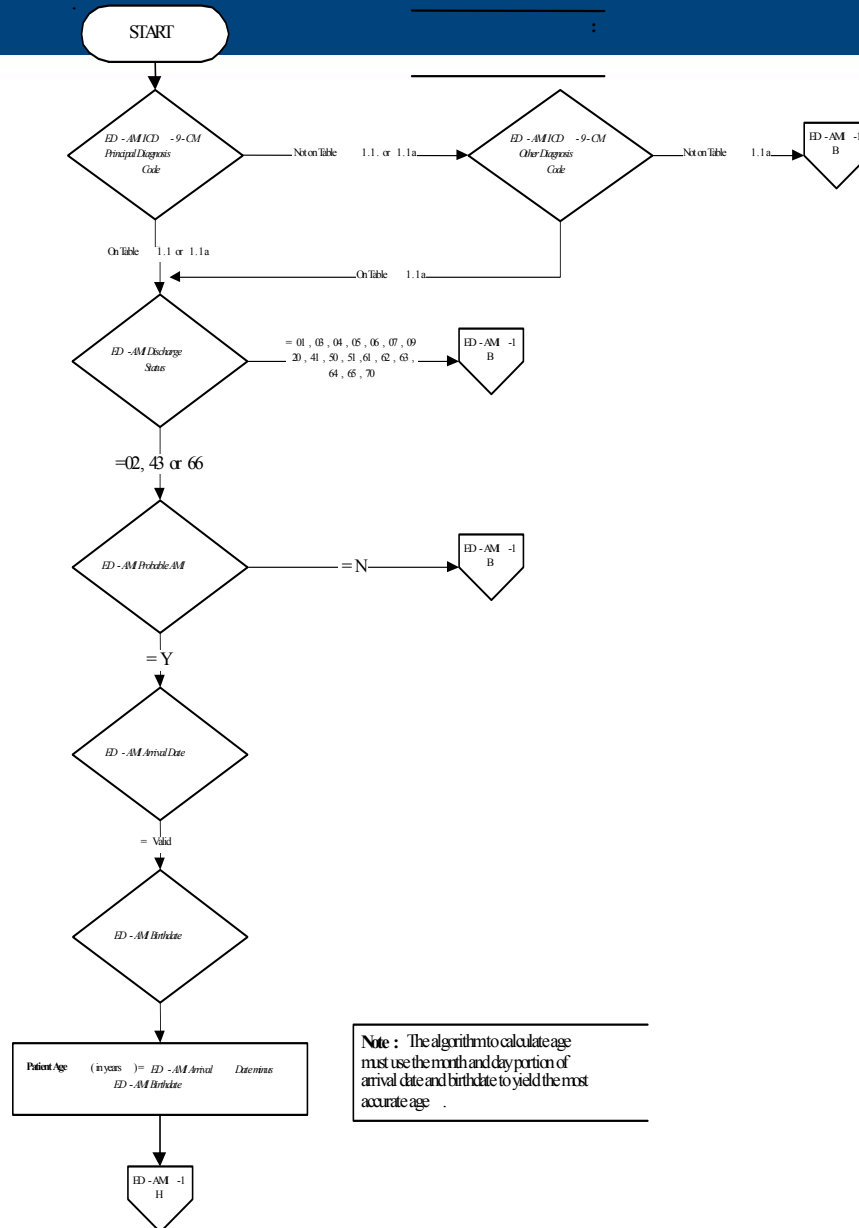
Was there documentation a physician/APN/PA presumed the emergency department patient's condition to be cardiac in origin?

ED-AMI ICD-9-CM Principal (and other) Diagnosis Code

Tables 1.1 and 1.1a



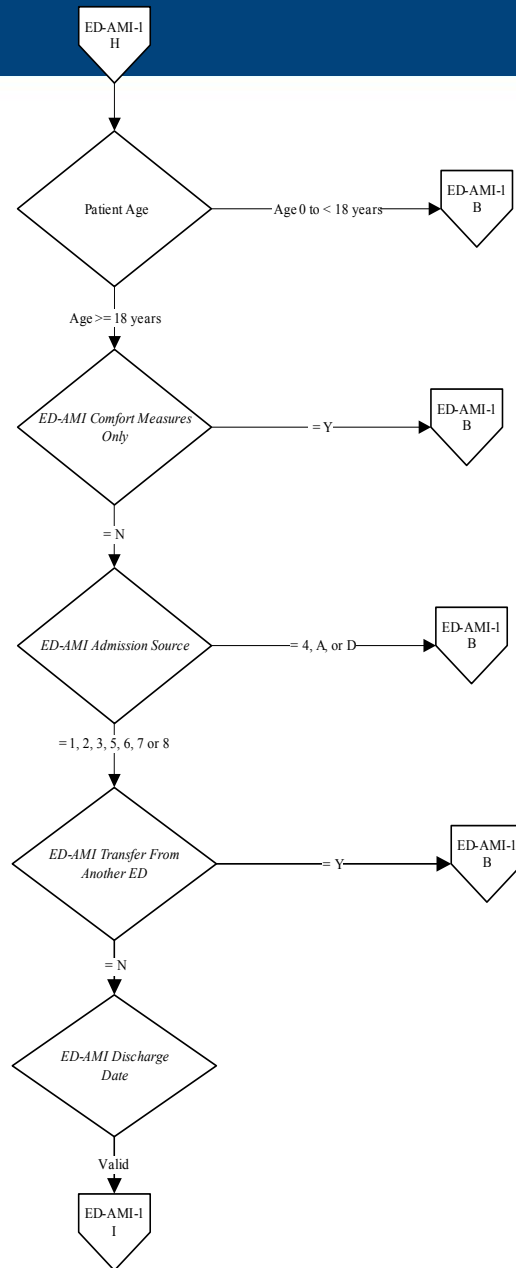
ED AMI 1



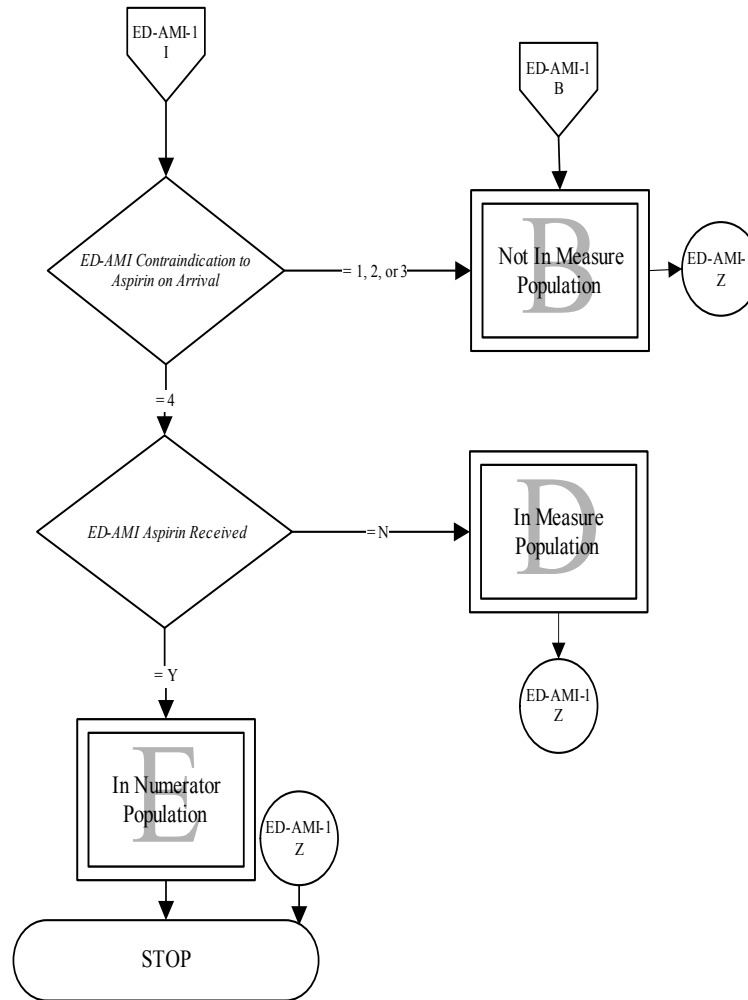
Note : The algorithm to calculate age must use the month and day portion of arrival date and birthdate to yield the most accurate age .



ED AMI 1



ED AMI 1



ED Median Time to Fibrinolysis

- **Description:** Median time from emergency department arrival to administration of fibrinolytic therapy in ED patients with ST-segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to ED arrival and prior to transfer



ED Median Time to Fibrinolysis

- Nearly 2 lives per 1000 patients are lost per hour of delay ⁽¹⁾

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. 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



ED Median Time to Fibrinolysis

- Fibrinolytic therapy [should] be given within 30 minutes of hospital arrival in patients with ST-elevation myocardial infarction (2)

2. 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

ED Median Time to Fibrinolysis

- **Rationale:** Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction.



ED AMI 2

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>.



Continuous Variable Statement: Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer.

No Numerator or Denominator for this measure type.



Excluded Populations

- Less than 18 years of age
- Received in transfer from another acute care hospital including emergency rooms
- Expired in the ED
- Left AMA
- Receiving CMO
- Had a documented reason for delay explicitly linked to the fibrinolytic therapy

ED AMI 2

Data Elements

- »ED-AMI Admission Source
- »ED-AMI Arrival Date
- »ED-AMI Arrival Time
- »ED-AMI Birthdate
- »ED-AMI Comfort Measures Only
- »ED-AMI Discharge Status
- »ED-AMI Fibrinolytic Administration
- »ED-AMI Fibrinolytic Administration Date
- »ED-AMI Fibrinolytic Administration Time
- »ED-AMI ICD-9-CM Principal Diagnosis Code
- »ED-AMI Initial ECG Interpretation
- »ED-AMI Transfer From Another ED
- »ED-AMI Reason for Delay in Fibrinolytic Therapy

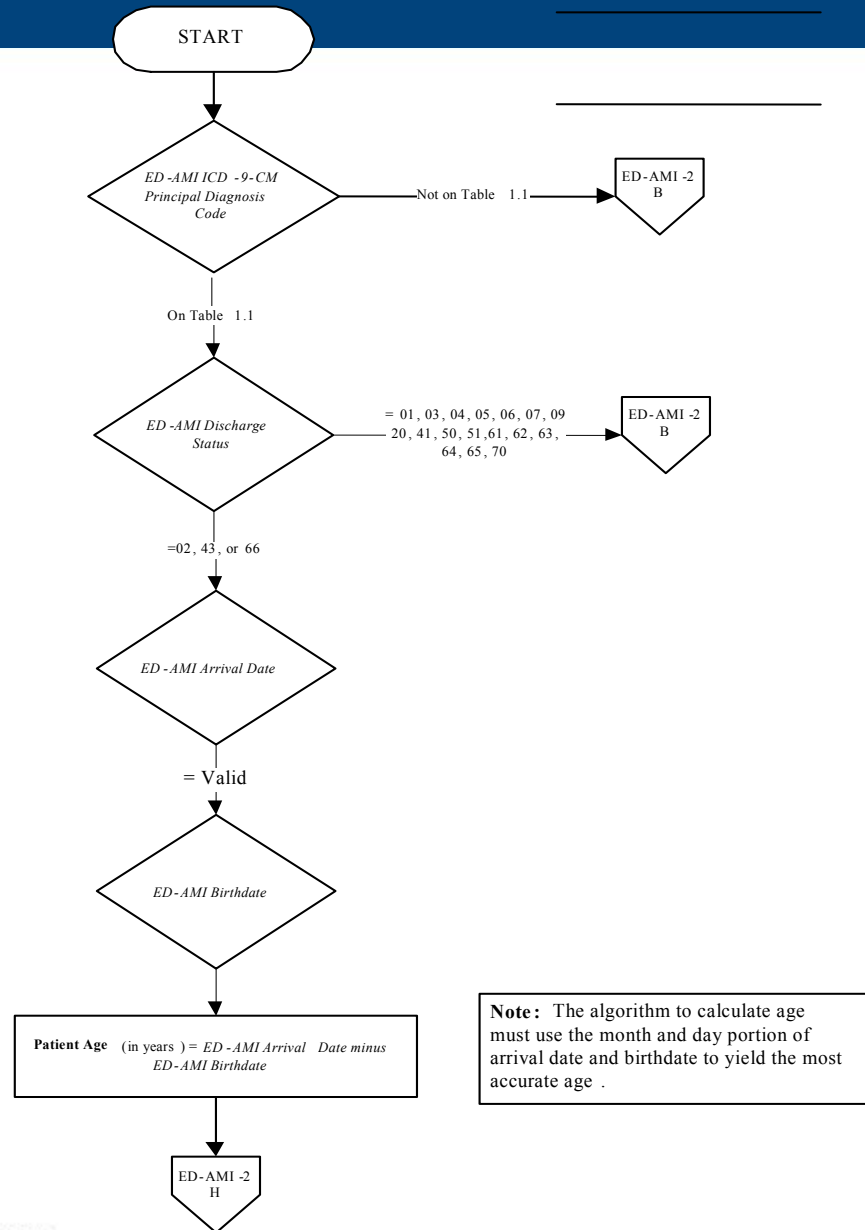
Data Elements

ED-AMI ICD-9-CM Principal Diagnosis
Code

Table 1.1

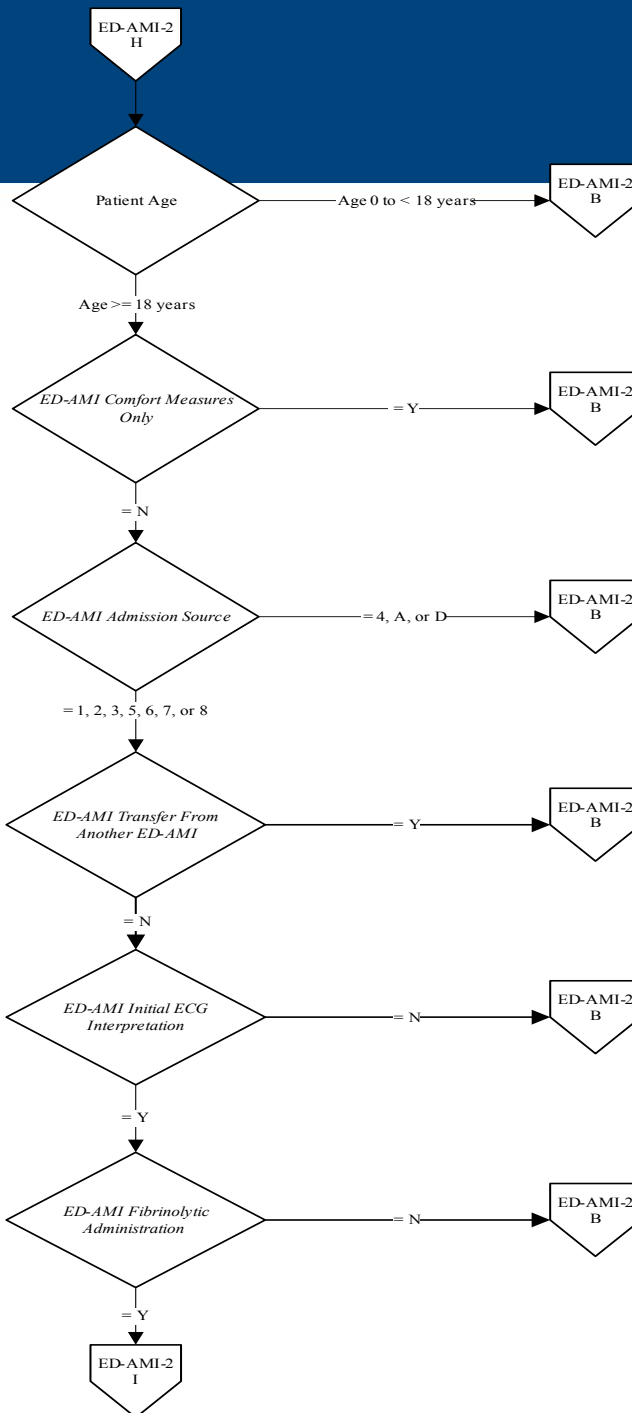


ED AMI 2



Note: The algorithm to calculate age must use the month and day portion of arrival date and birthdate to yield the most accurate age .

ED AMI 2



ED Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

- **Description:** Emergency Department acute myocardial infarction (AMI) patients receiving fibrinolytic therapy during the ED stay and having a time from ED arrival to fibrinolysis of 30 minutes or less



ED Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

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.



ED AMI 3

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

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.



ED AMI 3

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>.



Denominator would include Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.

Numerator would include Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.



Excluded Populations

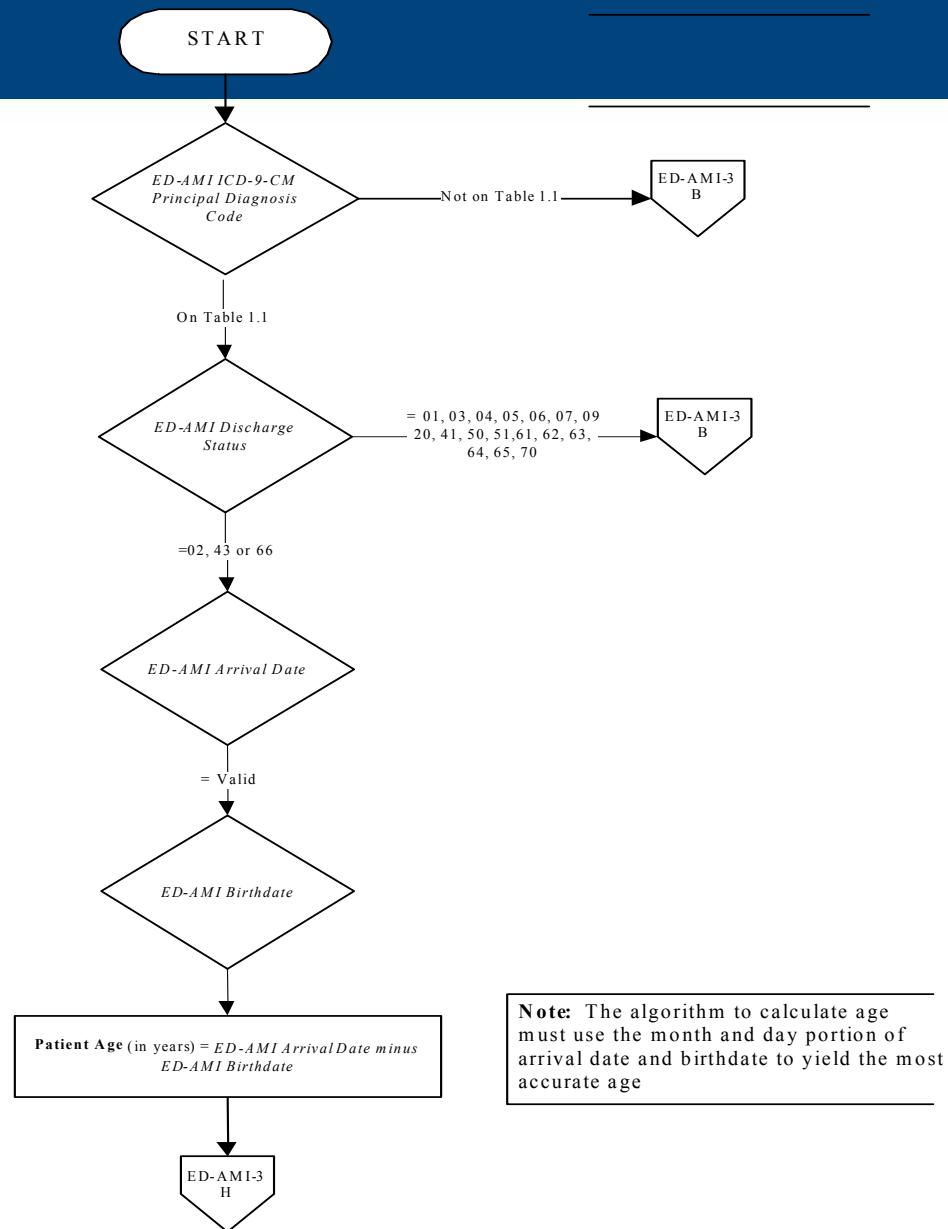
- Less than 18 years of age
- Received in transfer from another acute care hospital including emergency rooms
- Expired in the ED
- Left AMA
- Receiving CMO
- Had a documented reason for delay explicitly linked to the fibrinolytic therapy

ED AMI 3

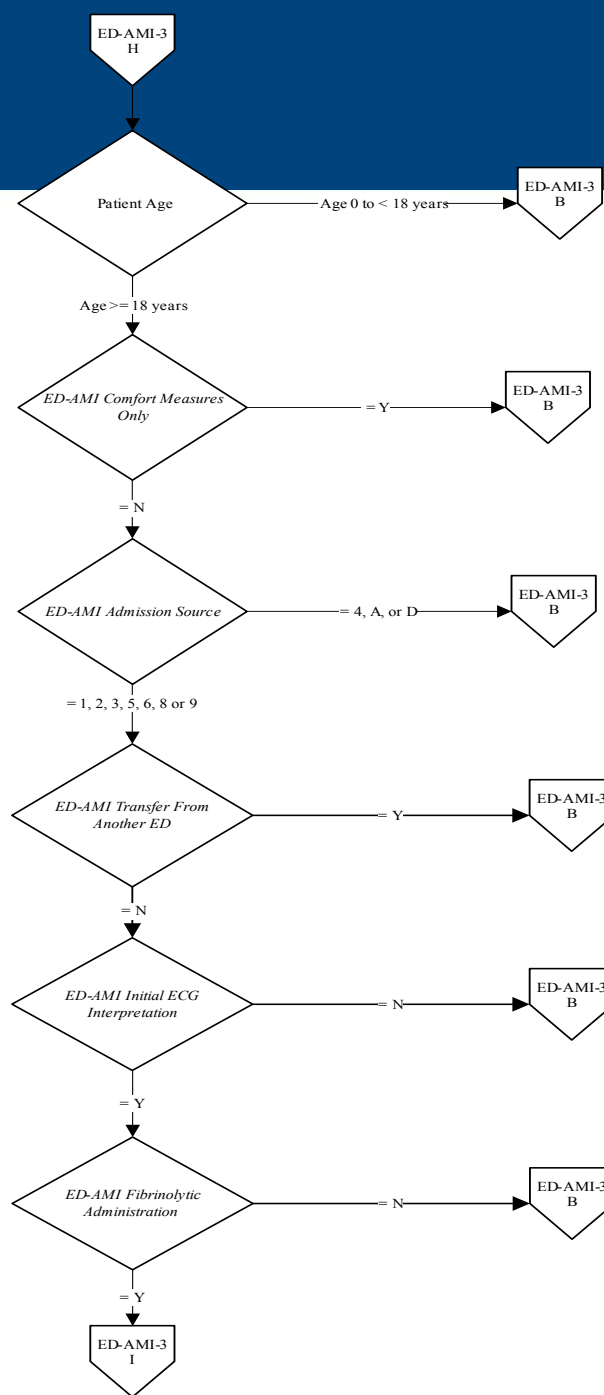
Data Elements

- »ED-AMI Admission Source
- »ED-AMI Arrival Date
- ED-AMI Arrival Time
- »ED-AMI Birthdate
- »ED-AMI Comfort Measures Only
- »ED-AMI Discharge Status
- ED-AMI Fibrinolytic Administration
- ED-AMI Fibrinolytic Administration Date
- ED-AMI Fibrinolytic Administration Time
- »ED-AMI ICD-9-CM Principal Diagnosis Code
- »ED-AMI Initial ECG Interpretation
- »ED-AMI Transfer From Another ED
- »ED-AMI Reason for Delay in Fibrinolytic Therapy

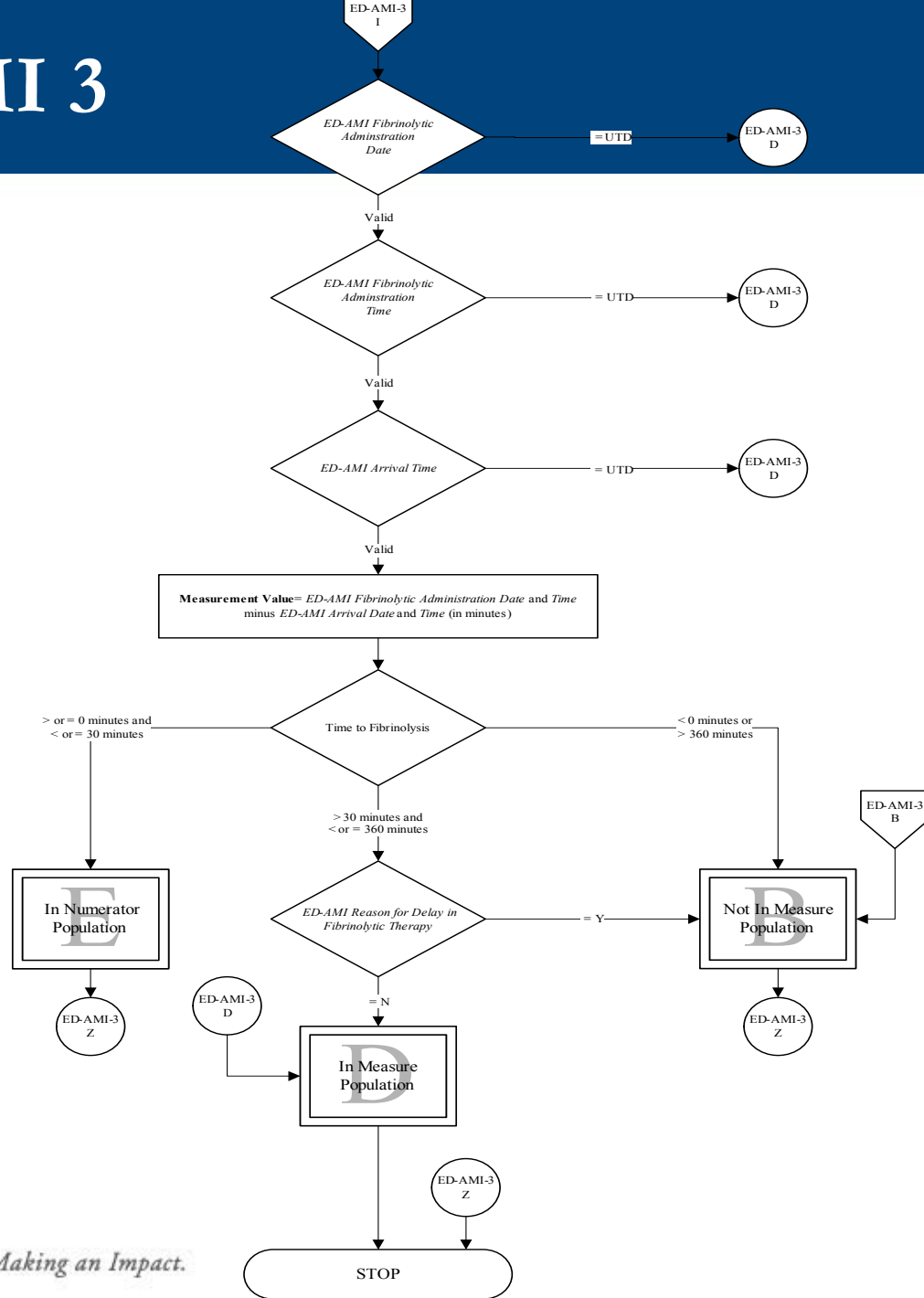
ED AMI 3



ED AMI 3



ED AMI 3



ED Median Time to ECG

- **Description:** Median time from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients.



ED Median Time to ECG

- **Rationale:** Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of STEMI have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department arrival ⁽¹⁾

1. 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>.

ED Median Time to ECG

- **Continuous Variable Statement:** Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients.

No Numerator or Denominator for this measure type

Excluded Populations

- Less than 18 years of age
- Received in transfer from another acute care hospital including emergency rooms
- Expired in the ED
- Left AMA
- Receiving CMO

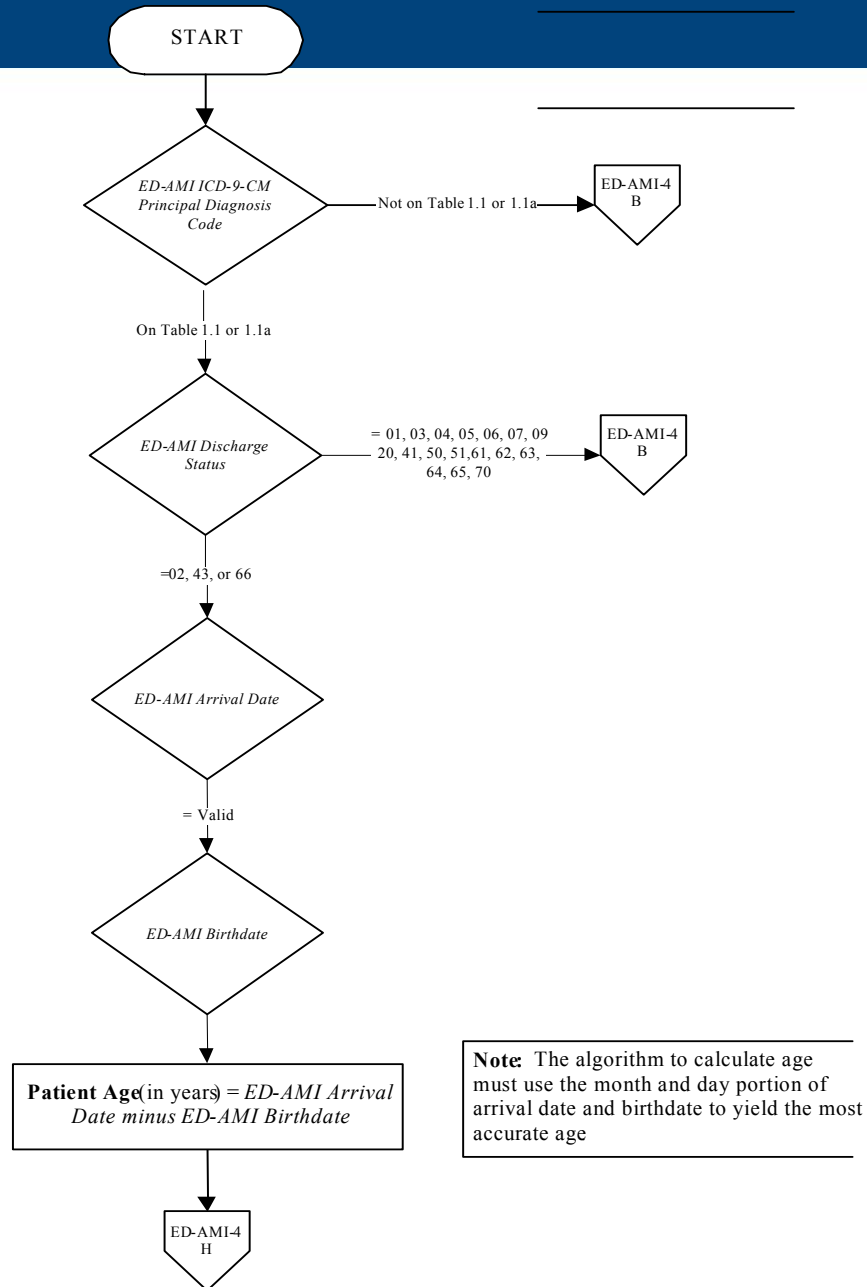


ED AMI 4

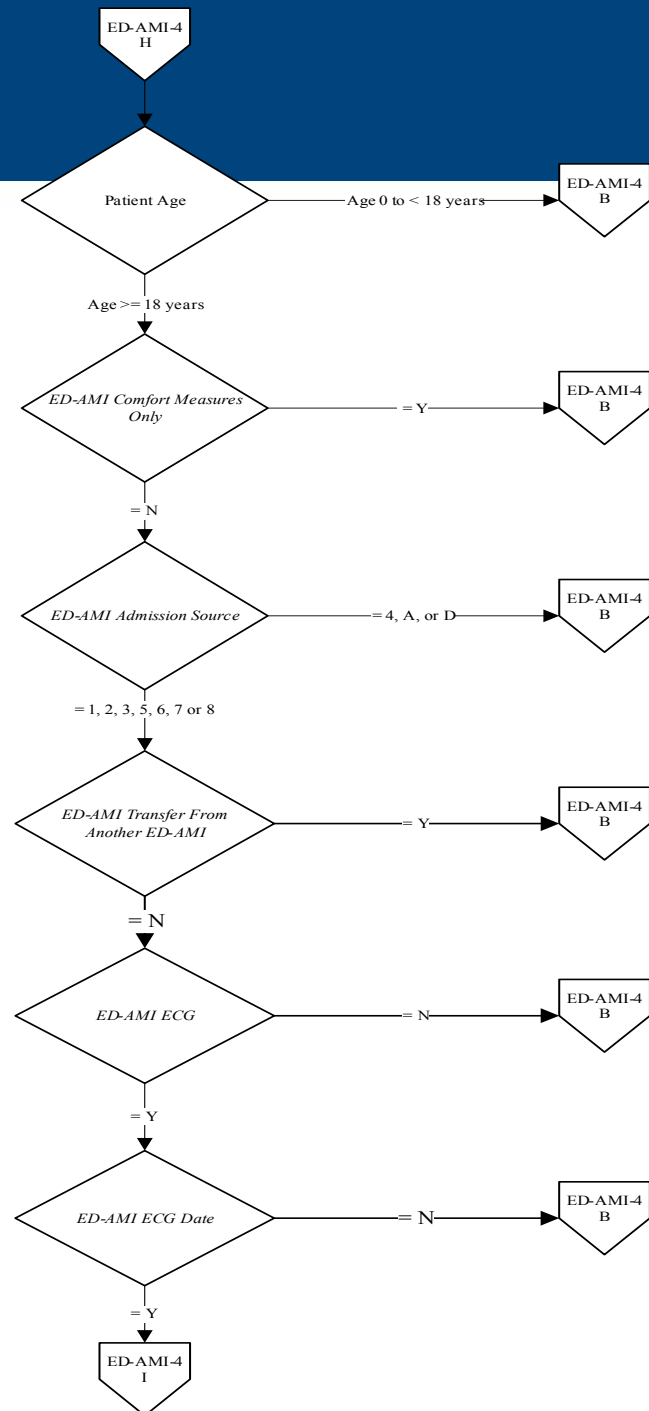
12 Data Elements

- »ED-AMI Admission Source
- »ED-AMI Arrival Date
- »ED-AMI Arrival Time
- »ED-AMI Birthdate
- »ED-AMI Comfort Measures Only
- »ED-AMI Discharge Status
- »ED-AMI ICD-9-CM Other Diagnosis Code
- »ED-AMI ICD-9-CM Principal Diagnosis Code
- »ED-AMI ECG
- »ED-AMI ECG Date
- »ED-AMI ECG Time
- »ED-AMI Transfer From Another ED

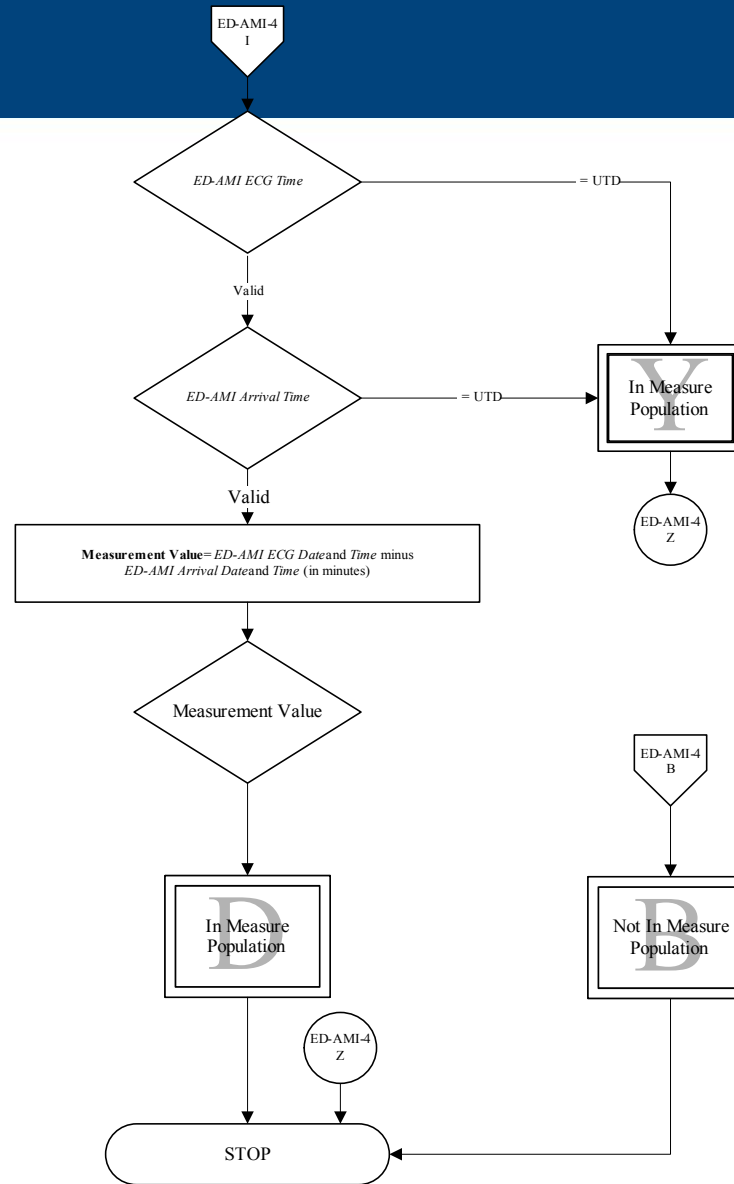
ED AMI 4



ED AMI 4



ED AMI 4



Note: Note: There will be no category assignment E for this measure because it is a continuous variable.

ED Median Time to Transfer to Another Facility for Primary PCI

- **Description:** Median time from emergency department arrival to time of transfer to another facility for Primary PCI.



ED Median Time to Transfer to Another Facility for Primary PCI

- **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.



ED Median Time to Transfer to Another Facility for Primary PCI

- The earlier primary coronary intervention is provided, the more effective it is. (1) (2)
 - 1. 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.
 - 2. 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

ED Median Time to Transfer to Another Facility for Primary PCI

- National guidelines recommend the prompt initiation of PCI in patients presenting with ST-elevation myocardial infarction (Antman, 2004). (3)

3. 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

ED Median Time to Transfer to Another Facility for Primary PCI

- Current recommendations support a door-to balloon time of 90 minutes or less (4)

4. 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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ED Median Time to Transfer to Another Facility for Primary PCI

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 .

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- **Continuous Variable Statement:** Time (in minutes) from emergency department arrival to transfer to another facility for primary PCI.

No Numerator or Denominator for this measure type



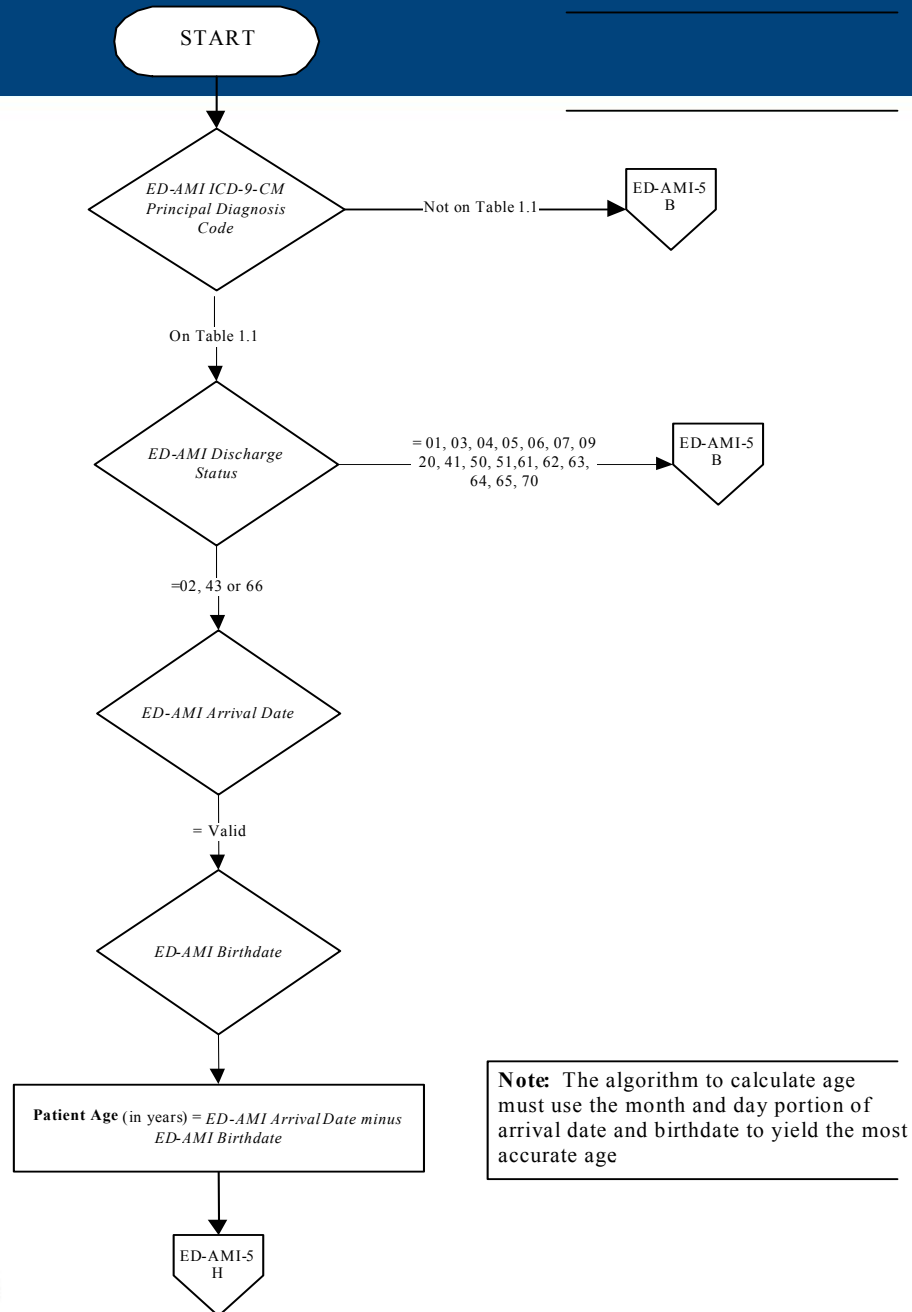
Excluded Populations

- Patients less than 18 years of age
- Patients received in transfer from another acute care hospital, including another emergency department
- Patients who expired in the emergency department
- Patients who left against medical advice
- Patients receiving *ED-AMI Comfort Measures Only*
- Patients receiving *ED-AMI Fibrinolytic Administration*

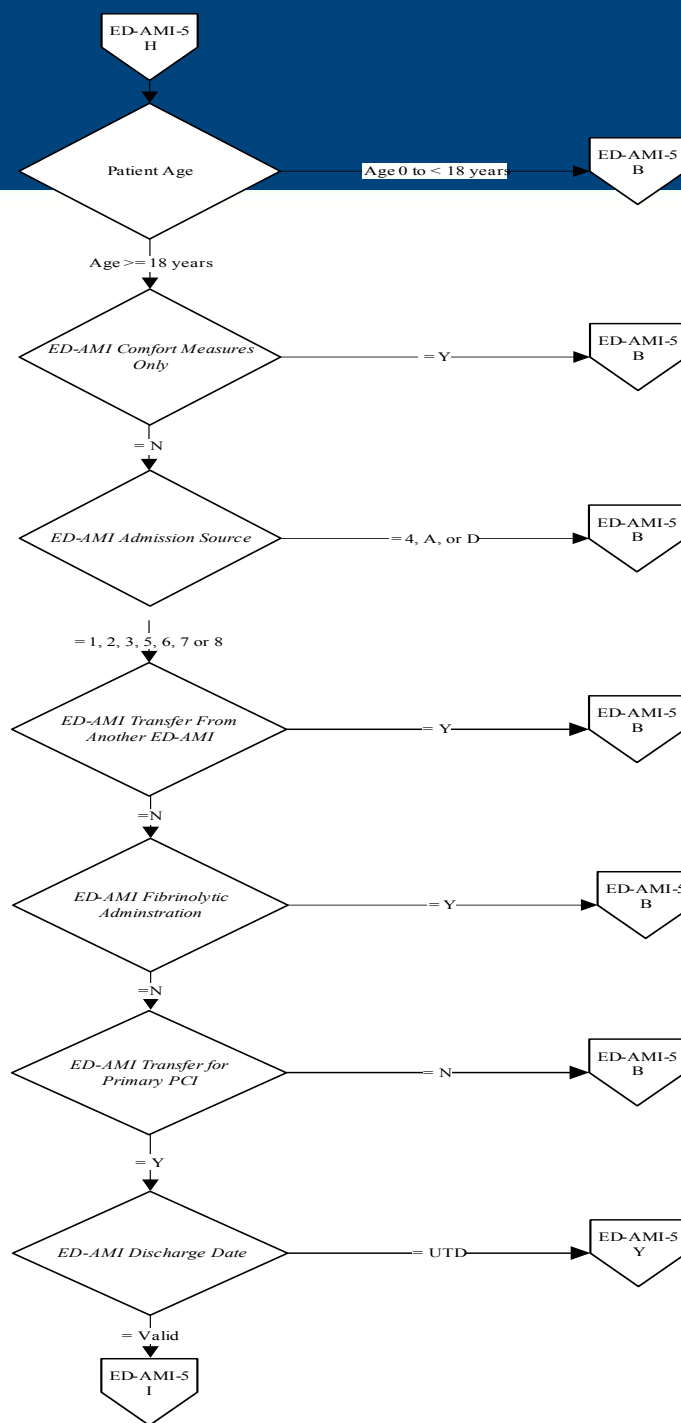
11 Data Elements

- ED-AMI Admission Source
 - ED-AMI Arrival Time
- ED-AMI Birthdate
- ED-AMI Comfort Measures Only
- ED-AMI Discharge Date
- ED-AMI Discharge Time
- ED-AMI Discharge Status
- ED-AMI Fibrinolytic Administration
- ED-AMI ICD-9-CM Principal Diagnosis Code
 - ED-AMI Transfer for Primary PCI
- ED-AMI Transfer From Another ED

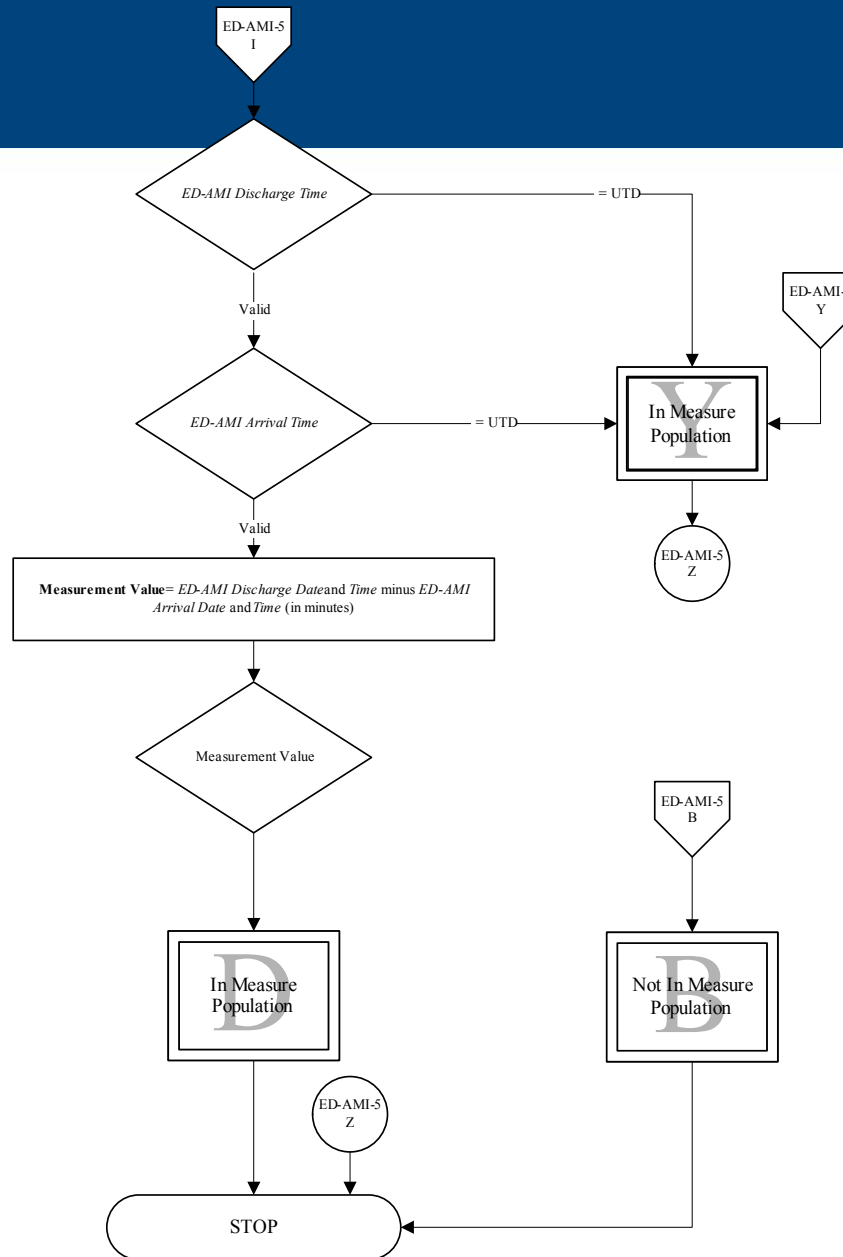
ED AMI 5



ED AMI 5



ED AMI 5



Note: Note: There will be no category assignment E for this measure because it is a continuous variable.

- Measure Information Forms (MIF's)
 - ◆ Purpose
 - ◆ Definition of numerator and denominator
 - ◆ Selected references
 - ◆ Algorithms

- Data Element Pages

<http://www.masspro.org/HS/HC/education.php>



- Appendix H
 - ◆ Table 2.5 Discharge Disposition
 - ◆ Table 2.6 Qualifiers and Modifiers

- Appendix C
 - ◆ Medication Tables
 - › Aspirin
 - › Warfarin
 - › Fibrinolytics

<http://www.masspro.org/HS/HC/education.php>



- Slides from today's presentation can be found at:

<http://www.masspro.org/pastevent.php>



Outpatient Measures

- PQRI #1 Diabetes
 - ◆ Hemoglobin A1c Poor Control in Type I or II DM
- PQRI #5 Heart Failure
 - ◆ ACE I or ARB for LVSD
- PQRI # 20 Perioperative Care
 - ◆ Timing of antibiotic prophylaxis
- PQRI # 21 Perioperative Care
 - ◆ Selection of Prophylactic antibiotic
- PQRI # 59 Pneumonia
 - ◆ Empiric antibiotic for CAP



Outpatient Measures

- CMS release of final measures this fall 2007
- You can find the proposed rule for outpatient measures at
 - ◆ <http://www.cms.hhs.gov/QuarterlyProviderUpdates/downloads/cms1392p.pdf>
 - ◆ RHQDAPU starts on page 173.
- Data collection & submission
 - ◆ Jan 01, 2008 discharges



Outpatient Measures

- You may submit electronic comments on specific issues in this regulation to <http://www.cms.hhs.gov/eRulemaking>.
 - ◆ Click on the link “Submit electronic comments on CMS regulations with an open comment period.”
 - ◆ Select CMS-1392-P
 - ◆ Include the caption "Quality Data" in your heading.
 - ◆ **Comment period ends 9/14/07**
 - ◆ (Attachments should be in Microsoft Word, WordPerfect, or Excel; however, [they] prefer Microsoft Word.

Masspro Contact info

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