Release Notes:
Measure Information Form
Version 2.5

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

Measure Information Form

Measure Set: Acute Myocardial Infarction (AMI)

Set Measure ID#: AMI-3

Performance Measure Name: ACEI or ARB for LVSD

Description: Acute myocardial infarction (AMI) patients with left ventricular systolic dysfunction (LVSD) and without both angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) contraindications who are prescribed an ACEI or ARB at hospital discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction.

Rationale: ACEI therapy reduces mortality and morbidity in patients with left ventricular systolic dysfunction (LVSD) after AMI (Flather, 2000; Pfeffer, 1992; Torp-Peterson, 1999; and Yusuf, 1992). Recent clinical trials have also established ARB therapy as an acceptable alternative to ACEI, especially in patients with heart failure and/or LVSD who are ACEI intolerant (Granger, 2003 and Pfeffer, 2003). National guidelines strongly recommend ACEI for patients hospitalized with AMI who have either clinical heart failure or LVSD (Antman, 2004). Guideline committees have also supported the inclusion of ARBs in performance measures for AMI (Antman, 2004). Despite these recommendations, ACEIs remain under-utilized in eligible older patients hospitalized with AMI (Jencks, 2000).

Type of Measure: Process

Improvement Noted As: An increase in the rate

Numerator Statement: AMI patients who are prescribed an ACEI or ARB at hospital discharge

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:
- *ACEI Prescribed at Discharge*
- *ARB Prescribed at Discharge*

Denominator Statement: AMI patients with LVSD and without both ACEI and ARB contraindications

Included Populations: Discharges with:

- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, Table 1.1 AND
- Chart documentation of a LVEF less than 40% or a narrative description of LVS function consistent with moderate or severe systolic dysfunction

Excluded Populations:

- Patients less than 18 years of age
- Patients who have a Length of Stay >120 days
- Patients with *Comfort Measures Only* documented
- Patients enrolled in clinical trials
- Patients discharged/transferred to another hospital for inpatient care
- Patients who left against medical advice or discontinued care
- Patients who expired
- Patients discharged/transferred to a federal health care facility
- Patients discharged/transferred to hospice
- Patients with BOTH a potential contraindication/reason for not prescribing an ACEI at discharge AND a potential contraindication/reason for not prescribing an ARB at discharge, as evidenced by one or more of the following:
  - ACEI allergy AND ARB allergy
  - Moderate or severe aortic stenosis
  - Physician/advanced practice nurse/physician assistant (physician/APN/PA) documentation of BOTH a reason for not prescribing an ACEI at discharge AND a reason for not prescribing an ARB at discharge Note: Documentation of a reason for not prescribing one class (either ACEI or ARB) should be considered implicit documentation of a reason for not prescribing the other class for the following five conditions only:
    - Angioedema
    - Hyperkalemia
    - Hypotension
    - Renal artery stenosis
    - Worsening renal function/renal disease/dysfunction
  - Reason documented by physician/APN/PA for not prescribing an ARB at discharge AND an ACEI allergy
  - Reason documented by physician/APN/PA for not prescribing an ACEI at discharge AND an ARB allergy

Data Elements:

- *Admission Date*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Contraindication to Both ACEI and ARB at Discharge*
- *Discharge Date*
- *Discharge Status*
- *ICD-9-CM Principal Diagnosis Code*
- *LVSD*

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: None

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:

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- 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.

- Flather MD, Yusuf S, Kober L et al. Long-term ACE-inhibitor therapy in patients with heart failure or left-ventricular dysfunction: a systematic overview of data from individual patients. ACE-Inhibitor Myocardial Infarction Collaborative Group. Lancet 2000; 355(9215):1575-1581.
- Granger CB, McMurray JJ, Yusuf S et al. Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function intolerant to angiotensin-converting-enzyme inhibitors: the CHARM-Alternative trial. *Lancet.* 2003;362:772-776.
- 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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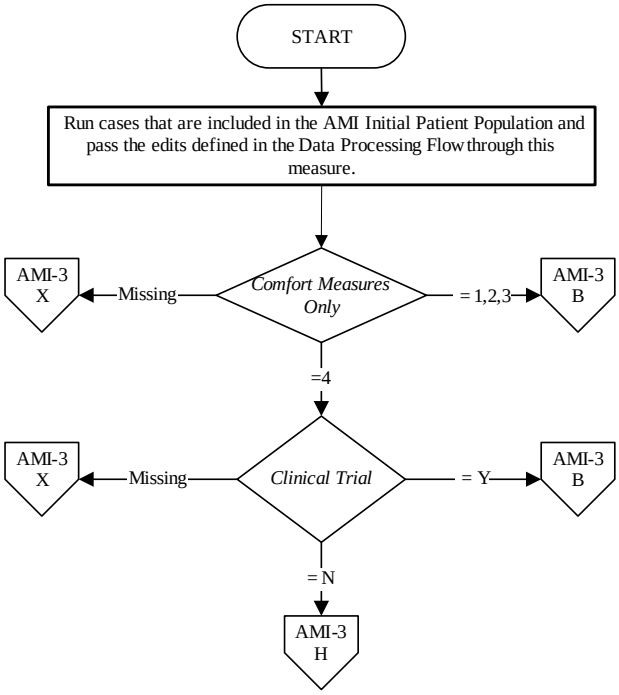
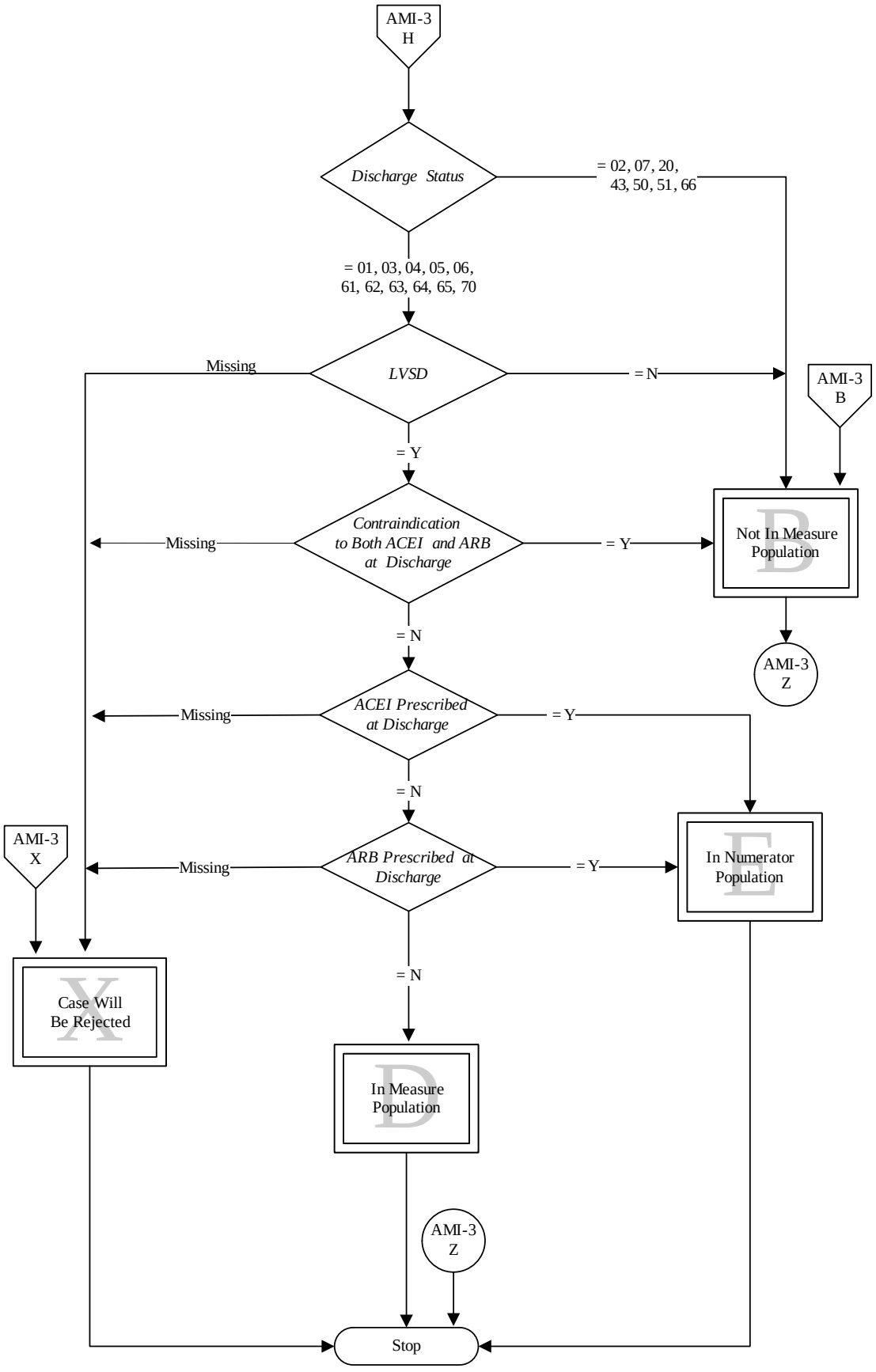
- Pfeffer MA, Braunwald E, Moye LA, Basta L, Brown EJ, Jr., Cuddy TE, Davis BR, Geltman EM, Goldman S, Flaker GC, for the SAVE Investigators. Effect of captopril on mortality and morbidity in patients with left ventricular dysfunction after myocardial infarction. Results of the Survival and Ventricular Enlargement Trial. *N Engl J Med*. 1992;327:669-77.
- Pfeffer MA, McMurray JJ, Velazquez EJ et al. Valsartan, captopril, or both in myocardial infarction complicated by heart failure, left ventricular dysfunction, or both. *N Engl J Med.* 2003;349:1893-1906.
- Torp-Pedersen C, Kober L. Effect of ACE inhibitor trandolapril on life expectancy of patients with reduced left-ventricular function after acute myocardial infarction. TRACE Study Group. Trandolapril Cardiac Evaluation. Lancet 1999; 354(9172):9-12.
- Yusuf S, Pepine CJ, Garces C et al. Effect of enalapril on myocardial infarction and unstable angina in patients with low ejection fractions. Lancet 1992; 340(8829):1173-1178.

AMI-3: ACEI or ARB for LVSD

Numerator: AMI patients who are prescribed an ACEI or ARB at hospital discharge .

Denominator: AMI patients with LVSD and without both ACEI and ARB contraindications .




AMI-3
H
Discharge Status
= 02, 07, 20,
43, 50, 51, 66
= 01, 03, 04, 05, 06,
61, 62, 63, 64, 65, 70
LVSD
Missing
= N
AMI-3
B
= Y
Contraindication
to Both ACEI and ARB
at Discharge
Missing
= Y
B
Not In Measure
Population
= N
AMI-3
Z
ACEI Prescribed
at Discharge
Missing
= Y
= N
AMI-3
X
ARB Prescribed at
Discharge
Missing
= Y
E
In Numerator
Population
= N
X
Case Will
Be Rejected
D
In Measure
Population
AMI-3
Z
Stop