

NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

**Measure Information Form
Collected For:
The Joint Commission Only
CMS Voluntary Only**

Measure Set: Heart Failure (HF)

Set Measure ID#: HF-3

Performance Measure Name: ACEI or ARB for LVSD

Description: Heart failure patients with left ventricular systolic dysfunction (LVSD) 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: ACE inhibitors reduce mortality and morbidity in patients with heart failure and left ventricular systolic dysfunction (The SOLVD Investigators, 1991 and CONSENSUS Trial Study Group, 1987) and are effective in a wide range of patients (Masoudi, 2004). Clinical trials have also established ARB therapy as an acceptable alternative to ACEI, especially in patients who are ACEI intolerant (Granger, 2003 and Pfeffer, 2003). National guidelines strongly recommend ACEIs for patients hospitalized with heart failure (Jessup, 2009 and HFSA, 2010). Guideline committees have also supported the inclusion of ARBs in performance measures for heart failure (Executive Council of the Heart Failure Society of America, 2004).

Type of Measure: Process

Improvement Noted As: An increase in the rate

Numerator Statement: Heart failure 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: Heart failure patients with LVSD.

Included Populations: Discharges with:

- An *ICD-9-CM Principal Diagnosis Code* for heart failure as defined in Appendix A, Table 2.1

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 who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2)
- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients enrolled in clinical trials
- Patients discharged to another hospital
- Patients who left against medical advice
- Patients who expired
- Patients discharged to home for hospice care
- Patients discharged to a health care facility for hospice care
- Patients with *Comfort Measures Only* documented
- Patients with a documented *Reason for No ACEI and No ARB at Discharge*

Data Elements:

- *Admission Date*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Discharge Date*
- *Discharge Disposition*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Principal Procedure Code*
- *LVSD*
- *Reason for No ACEI and No ARB at Discharge*

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: None

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

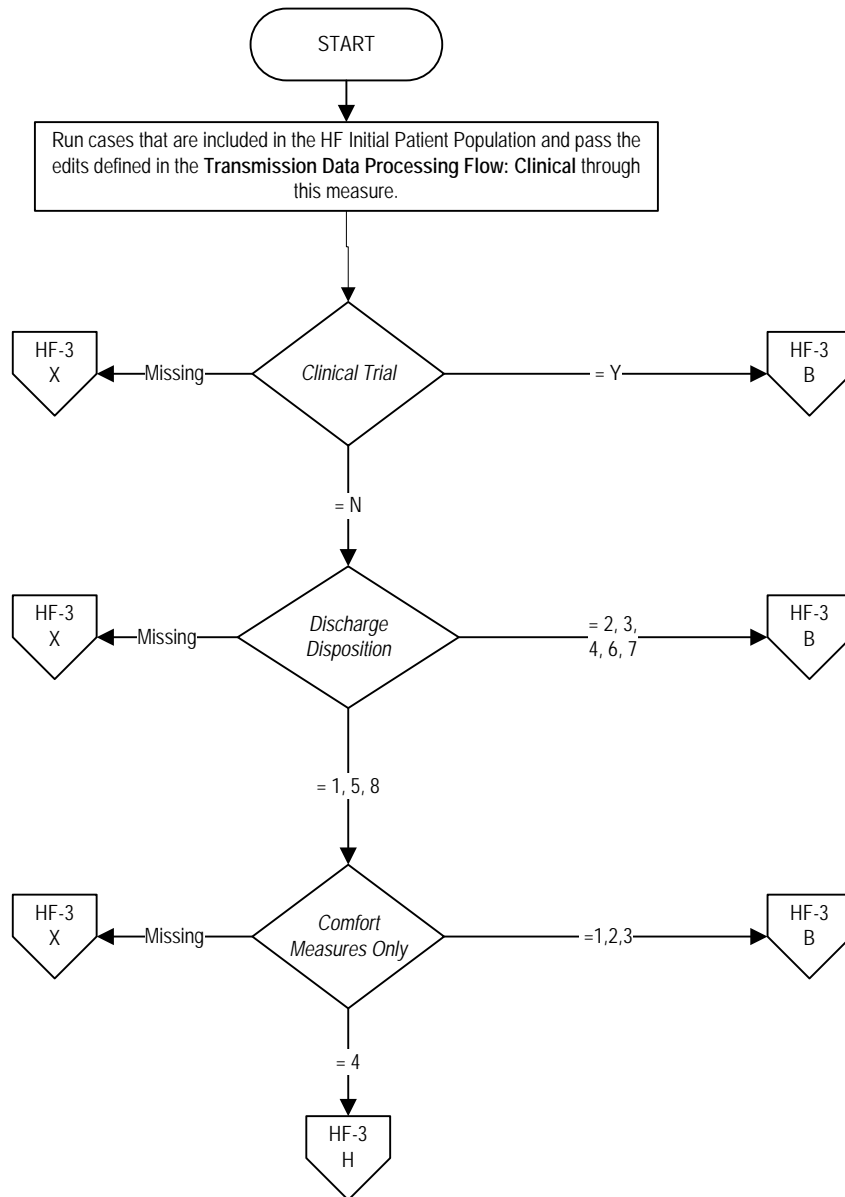
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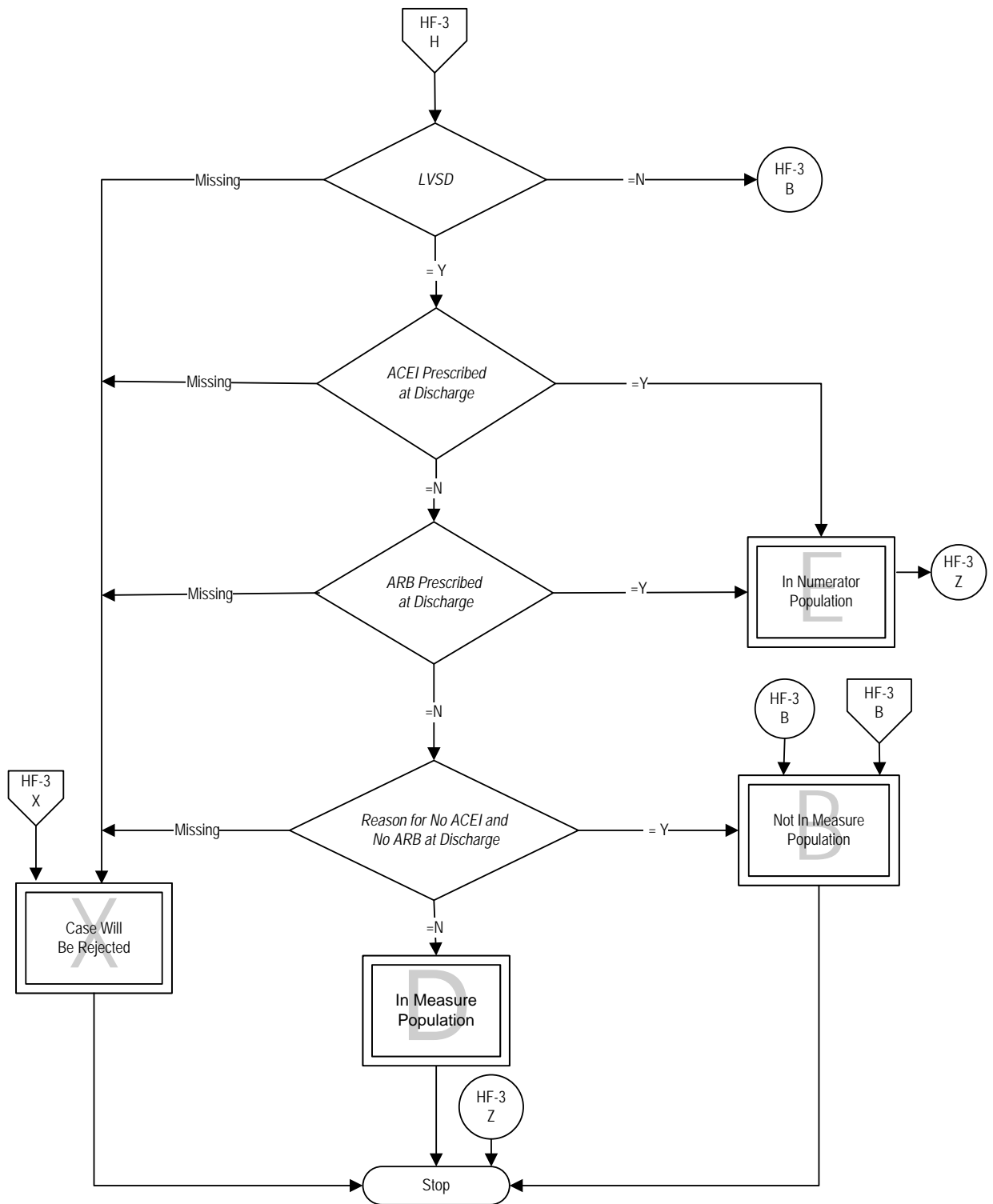
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- Effects of enalapril on mortality in severe congestive heart failure. Results of the Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS). The CONSENSUS Trial Study Group. *N Engl J Med*. 1987;316:1429-1435.
- Executive Council of the Heart Failure Society of America. Implications of recent clinical trials for heart failure performance measures. HFSA Position Statement. *J Card Fail*. 2004;10:4-5.
- 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.
- Jessup M, Abraham WT, Casey DE, Feldman AM, Francis GS, Ganiats TG, et al, writing on behalf of the 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult Writing Committee. 2009 focused update: ACCF/AHA guidelines for the diagnosis and management of heart failure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2009;53:1343– 82.
- Lindenfeld J, Albert NM, Boehmer JP, Collins SP, Ezekowitz JA, Givertz MM, et al. Executive Summary: HFSA 2010 Comprehensive Heart Failure Practice Guideline. *J Card Fail* 2010; 16:475-539.
- Masoudi FA, Rathore SS, Wang Y et al. National patterns of use and effectiveness of angiotensin-converting enzyme inhibitors in older patients with heart failure and left ventricular systolic dysfunction. *Circulation*. 2004;110:724-731.
- 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.
- The SOLVD Investigators. Effect of enalapril on survival in patients with reduced left ventricular ejection fractions and congestive heart failure. *N Engl J Med*. 1991;325:293-302.

HF-3: ACEI or ARB for LVSD

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

Denominator: Heart failure patients with LVSD.





Heart Failure (HF)-3: Angiotensin Converting Enzyme Inhibitor (ACEI) or Angiotensin Receptor Blocker (ARB) for Left Ventricular Systolic Dysfunction (LVSD)

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

Denominator: Heart failure patients with LVSD.

1. Start processing. Run cases that are included in the Heart Failure 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 Discharge Disposition.
3. Check Discharge Disposition
 - a. If Discharge Disposition is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Discharge Disposition equals 2, 3, 4, 6 or 7, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
 - c. If Discharge Disposition equals 1, 5 or 8, continue processing and proceed to Comfort Measures Only.
4. Check Comfort Measures Only
 - a. If Comfort Measures Only is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Comfort Measures Only equals 1, 2 or 3, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
 - c. If Comfort Measures Only equals 4, continue processing and proceed to LVSD.
5. Check LVSD
 - a. If LVSD is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.

- b. If LVSD 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 LVSD equals Yes, continue processing and proceed to ACEI Prescribed at Discharge.
6. Check ACEI Prescribed at Discharge
- a. If ACEI Prescribed at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If ACEI Prescribed at Discharge is Yes, the case will proceed to a Measure Category Assignment of E and will be in the numerator population. Stop processing.
 - c. If ACEI Prescribed at Discharge is No, continue processing and proceed to ARB Prescribed at Discharge.
7. Check ARB Prescribed at Discharge
- a. If ARB Prescribed at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If ARB Prescribed at Discharge is Yes, the case will proceed to a Measure Category Assignment of E and will be in the numerator population. Stop processing.
 - c. If ARB Prescribed at Discharge is No, continue processing and proceed to Reason for No ACEI or No ARB at Discharge.
8. Check Reason for No ACEI and No ARB at Discharge
- a. If Reason for No ACEI and No ARB at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Reason for No ACEI and No ARB at Discharge is No, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
 - c. If Reason for No ACEI and No ARB at Discharge is Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.