

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

## **Measure Information Form**

**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:** ACEI therapy reduces 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). Recent 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 (Hunt, 2005 and HFSA, 2006). 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). Despite these recommendations, ACEIs and ARBs remain underutilized in eligible older patients hospitalized with heart failure (Jencks, 2000 and Masoudi, 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 >120 days
- 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 *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 Status*
- *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 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:**

- Bonow RO, Bennett S, Casey DE, Ganiats TG, Hlatky MA, Konstam MA, Lambrew CT, Normand ST, Piña IL, Radford MJ, Smith AL, Stevenson L. ACC/AHA Clinical Performance Measures for Adults With Chronic Heart Failure: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Heart Failure Clinical Performance Measures). *J Am Coll Cardiol* 2005;46:1144–78. Available at <http://www.acc.org> and <http://www.americanheart.org>.
- 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.
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- 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.
- Heart Failure Society of America. HFSA 2006 Comprehensive Heart Failure Practice Guideline. *J Card Fail*. 2006 Feb;12(1):e1-2.
- Hunt SA. ACC/AHA 2005 guideline update for the diagnosis and management of chronic heart failure in the adult: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure). *J Am Coll Cardiol* 2005; 46(6):e1-82.
- 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.
- 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*, 325:293-302, 1991.

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

**Denominator:** Heart failure patients with LVSD.



