



## Complete Summary

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### TITLE

Heart failure: percent of patients who are prescribed an angiotensin converting enzyme inhibitor (ACEI) at hospital discharge.

### SOURCE(S)

Centers for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: heart failure (HF). Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2002 Aug 1. Various p.

Heart failure core performance measures. In: Specifications manual for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 July. p. HF-1 to HF-4-5.

## Brief Abstract

### DESCRIPTION

This measure assesses the percentage of heart failure patients with left ventricular systolic dysfunction (LVSD) and without angiotensin converting enzyme inhibitor (ACEI) contraindications who are prescribed an ACEI 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 function (LVF) consistent with moderate or severe systolic dysfunction.

This measure represents an alignment of Centers for Medicare and Medicaid Services and Joint Commission on Accreditation of Health Care Organizations measures. As such, some attributes characterized in this NQMC summary may be attributable to either or both organizations.

### RATIONALE

Angiotensin converting enzyme inhibitor (ACEI) therapy reduces mortality and morbidity in patients with heart failure and left ventricular systolic dysfunction. National guidelines strongly recommend ACEIs for patients hospitalized with heart failure. Despite these recommendations, ACEIs remain underutilized in older patients hospitalized with heart failure.

### PRIMARY CLINICAL COMPONENT

Heart failure; left ventricular systolic dysfunction; angiotensin converting enzyme inhibitor

#### DENOMINATOR DESCRIPTION

Heart failure patients with left ventricular systolic dysfunction (LVSD) and without angiotensin converting enzyme inhibitor (ACEI) contraindications (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### NUMERATOR DESCRIPTION

Heart failure patients who are prescribed an angiotensin converting enzyme inhibitor (ACEI) at hospital discharge

### Evidence Supporting the Measure

#### PRIMARY MEASURE DOMAIN

Process

#### SECONDARY MEASURE DOMAIN

Not applicable

#### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence  
One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [ACC/AHA guidelines for the evaluation 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 \(Committee to Revise the 1995 Guidelines for the Evaluation and Management of Heart Failure\).](#)

### Evidence Supporting Need for the Measure

#### NEED FOR THE MEASURE

Overall poor quality for the performance measured

#### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Jencks SF, 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 Oct 4;284(13):1670-6. [PubMed](#)

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Accreditation  
Collaborative inter-organizational quality improvement  
Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Age greater than or equal to 18 years

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Nearly 5 million patients in the United States (U.S.) have heart failure (HF), and approximately 500,000 to 900,000 new cases are diagnosed each year.

## EVIDENCE FOR INCIDENCE/PREVALENCE

Hunt SA, Baker DW, Chin MH, Cinquegrani MP, Feldman AM, Francis GS, Ganiats TG, Goldstein S, Gregoratos G, Jessup ML, Noble RJ, Packer M, Silver MA, Stevenson LW. ACC/AHA guidelines for the evaluation and management of chronic heart failure in the adult. Bethesda (MD): American College of Cardiology Foundation (ACCF); 2001 Sep. 56 p. [573 references]

## ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

## BURDEN OF ILLNESS

Unspecified

## UTILIZATION

Unspecified

## COSTS

Heart failure (HF) is the most common Medicare diagnosis-related group, and more Medicare dollars are spent for the diagnosis and treatment of HF than for any other diagnosis.

## EVIDENCE FOR COSTS

Hunt SA, Baker DW, Chin MH, Cinquegrani MP, Feldman AM, Francis GS, Ganiats TG, Goldstein S, Gregoratos G, Jessup ML, Noble RJ, Packer M, Silver MA, Stevenson LW. ACC/AHA guidelines for the evaluation and management of chronic heart failure in the adult. Bethesda (MD): American College of Cardiology Foundation (ACCF); 2001 Sep. 56 p. [573 references]

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Living with Illness

### IOM DOMAIN

Effectiveness

## Data Collection for the Measure

### CASE FINDING

Users of care only

## DESCRIPTION OF CASE FINDING

Discharges, age 18 years and older, with a principal diagnosis of heart failure

## DENOMINATOR (INDEX) EVENT

Clinical Condition  
Institutionalization

## DENOMINATOR INCLUSIONS/EXCLUSIONS

### Inclusions

Discharges with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code for heart failure and chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular function (LVF) consistent with moderate or severe systolic dysfunction

### Exclusions

- Patients less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice
- Patients with chart documentation of participation in a clinical trial testing alternatives to angiotensin converting enzyme inhibitors (ACEIs) as first-line heart failure therapy
- Patients with one or more of the following ACEI contraindications/reasons for not prescribing ACEI documented in the medical record:
  - ACEI allergy;
  - Moderate or severe aortic stenosis;
  - Other reasons documented by a physician, nurse practitioner, or physician assistant for not prescribing ACEI at discharge.

Refer to the original measure documentation for details.

## NUMERATOR INCLUSIONS/EXCLUSIONS

### Inclusions

Heart failure patients who are prescribed an angiotensin converting enzyme inhibitor (ACEI) at hospital discharge

Exclusions  
Unspecified

Refer to the original measure documentation for details.

## DENOMINATOR TIME WINDOW

Time window is a single point in time

## NUMERATOR TIME WINDOW

Encounter or point in time

## DATA SOURCE

Administrative and medical records data

## LEVEL OF DETERMINATION OF QUALITY

Individual Case

## PRE-EXISTING INSTRUMENT USED

Unspecified

## Computation of the Measure

## SCORING

Rate

## INTERPRETATION OF SCORE

Better quality is associated with a higher score

## ALLOWANCE FOR PATIENT FACTORS

Unspecified

## STANDARD OF COMPARISON

External comparison at a point in time  
External comparison of time trends  
Internal time comparison

## Evaluation of Measure Properties

## EXTENT OF MEASURE TESTING

The core measure pilot project was a collaboration among the Joint Commission, five state hospitals associations, five measurement systems, and 83 hospitals from across nine states. Participating hospitals collected and reported data for heart failure (HF) measures from December 2000 to December 2001.

Reliability visits were completed the summer of 2001 at a random sample of 16 participating hospitals across 6 states.

Preliminary data from the pilot project shows a mean measure rate of 86% indicating some opportunity for improvement.

#### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 [cited 2002 Nov 13]. [8 p].

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Information on final specifications for national implementation of hospital core measures as of 11/04/02. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Nov 04 [cited 2002 Nov 13]. [10 p].

Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Overview of the heart failure (HF) core measure set. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Mar 22 [cited 2002 Nov 13]. [3 p].

### Identifying Information

#### ORIGINAL TITLE

ACEI for LVSD.

#### MEASURE COLLECTION

[Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Healthcare Organizations Aligned Measures](#)

#### MEASURE SET NAME

[Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Healthcare Organizations Aligned Heart Failure Measures](#)

#### DEVELOPER

Centers for Medicare and Medicaid Services  
Joint Commission on Accreditation of Healthcare Organizations

#### ENDORSER

National Quality Forum

#### INCLUDED IN

National Healthcare Disparities Report (NHDR)  
National Healthcare Quality Report (NHQR)

#### ADAPTATION

Measure was not adapted from another source.

#### RELEASE DATE

2000 Aug

#### REVISION DATE

2002 Aug

#### MEASURE STATUS

This is the current release of the measure.

#### SOURCE(S)

Centers for Medicare and Medicaid Services (CMS). 7th statement of work (SOW). Quality of care measure specifications: heart failure (HF). Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2002 Aug 1. Various p.

Heart failure core performance measures. In: Specifications manual for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 July. p. HF-1 to HF-4-5.

#### MEASURE AVAILABILITY

Centers for Medicare and Medicaid Services (CMS)  
The individual measure, "HF-3: ACEI for LVSD," is published in "Centers for Medicare/Medicaid Services, 7th Statement of Work, Quality of Care Measure Specifications: Heart Failure (HF)."

For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

Joint Commission on Accreditation of Healthcare Organizations (JCAHO)  
The individual measure "ACEI for LVSD," is published in "Specifications Manual for National Implementation of Hospital Core Measures." Information is available from the [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\) Web site](http://www.jcaho.org). For further information refer to [www.jcaho.org](http://www.jcaho.org).

#### COMPANION DOCUMENTS

Centers for Medicare and Medicaid Services (CMS)  
A software application designed for the collection and analysis of quality

improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](#). Supporting documentation is also available.

For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

Joint Commission on Accreditation of Healthcare Organizations (JCAHO)

The following are available:

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Overview of the heart failure (HF) core measure set . [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Mar 22 [cited 2002 Nov 13]. [3 p]. This document is available from the [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\) Web site](#).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 [cited 2002 Nov 13]. [8 p]. This document is available from the [JCAHO Web site](#).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Attributes of core performance measures and associated evaluation criteria. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 [cited 2002 Nov 13]. [4 p]. This document is available from the [JCAHO Web site](#).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Information on final specifications for national implementation of hospital core measures as of 11/04/02. [internet]. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2002 Nov 04 [cited 2002 Nov 13]. [10 p]. This document is available from the [JCAHO Web site](#).

## NQMC STATUS

This NQMC summary was completed by ECRI on February 7, 2003. The information was verified by the Centers for Medicare/Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations on February 12, 2003.

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