Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Heart failure: percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior left LVEF less than 40% who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at each hospital discharge.

Source(s)

American College of Cardiology Foundation (ACCF), American Heart Association (AHA), Physician Consortium for Performance ImprovementÂ® (PCPIÂ®). Heart failure performance measurement set. Chicago (IL): American Medical Association (AMA); 2016 Apr. 48 p. [29 references]

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior left ventricular ejection fraction (LVEF) less than 40% who were prescribed angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy either within a 12 month period when seen in the outpatient setting or at each hospital discharge.

Note: This measure and the Beta-blocker Therapy for Left Ventricular Systolic Dysfunction (see the related National Quality Measures Clearinghouse [NQMC] summary of the Physician Consortium for Performance Improvement [PCPI] measure Heart failure: percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF less than 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at each hospital discharge) address related aspects of care for effective treatment for patients with heart failure and should be measured concurrently. Both ACE inhibitors and beta-blockers have been shown to reduce mortality and hospitalizations and improve a patient's clinical status. ARBs can be considered a reasonable alternative for ACE inhibitors. Combined treatment with these agents produces additive benefits and is required for optimal management of heart failure. It is not recommended that either of these measures be used independently. The pairing of these measures is not intended to suggest the use of any particular scoring methodology (i.e., a composite score), nor does it imply either equality of or difference in the relative "weights" of the two measures. A performance score for each measure should be reported individually to provide actionable information upon which to focus quality improvement efforts.

Rationale

Heart failure is a chronic condition that poses a major and growing threat to the public's health. Improving the effectiveness of care and optimizing patient outcomes will become increasingly important as the population of the United States ages.

In the absence of contraindications, angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs) are recommended for all patients with symptoms of heart failure and reduced left ventricular systolic function. ACE inhibitors remain the first choice for inhibition of the renin-angiotensin system in chronic heart failure, but ARBs can now be considered a reasonable alternative. Both pharmacologic agents have been shown to decrease the risk of death and hospitalization. Additional benefits of ACE inhibitors include the alleviation of symptoms and the improvement of clinical status and overall sense of well-being of patients with heart failure (Yancy et al., 2003).

The following evidence statements are quoted verbatim from the referenced clinical guidelines:

7.3.2.2. ACE Inhibitors: Recommendation

Class I

ACE inhibitors are recommended in patients with heart failure with reduced ejection fraction (HF*r*EF) and current or prior symptoms, unless contraindicated, to reduce morbidity and mortality (Yancy et al., 2013).

Treatment with an ACE inhibitor should be initiated at low doses [see excerpt from guideline table below], followed by gradual dose increments if lower doses have been well tolerated… Clinicians should attempt to use doses that have been shown to reduce the risk of cardiovascular events in clinical trials. If these target doses of an ACE inhibitor cannot be used or are poorly tolerated, intermediate doses should be used with the expectation that there are likely to be only small differences in efficacy between low and high doses. Abrupt withdrawal of treatment with an ACE inhibitor can lead to clinical deterioration and should be avoided (Yancy et al., 2013).

Inhibitors of the Renin-Angiotensin-Aldosterone System…Commonly Used for the Treatment of Patients with [Heart Failure] with Low Ejection Fraction

Drug	Initial Daily Dose(s)	Maximum Dose(s)
ACE Inhibitors		
Captopril	6.25 mg 3 times	50 mg 3 times
Enalapril	2.5 mg twice	10 to 20 mg twice
Fosinopril	5 to 10 mg once	40 mg once
Lisinopril	2.5 to 5 mg once	20 to 40 mg once
Perindopril	2 mg once	8 to 16 mg once
Quinapril	5 mg twice	20 mg twice
Ramipril	1.25 to 2.5 mg once	10 mg once
Trandolapril	1 mg once	4 mg once
Angiotensin Receptor Blockers		
Candesartan	4 to 8 mg once	32 mg once
Losartan**	25 to 50 mg once	50 to 100 mg once
Valsartan	20 to 40 mg twice	160 mg twice

**[Note: Among ARBs, losartan has the weakest evidence supporting its value in heart failure patients. Additionally, while the 2009 guidelines recommended a maximum dosage of 100 mg, the maximum dosage recommendation for losartan has been increased to 150 mg based on the HEAAL trial (Konstam et al., 2009).]

7.3.2.3. ARBs: Recommendations

Class I

ARBs are recommended in patients with HF*r*EF with current or prior symptoms who are ACE inhibitor intolerant, unless contraindicated, to reduce morbidity and mortality (Yancy et al., 2013).

Class IIa

ARBs are reasonable to reduce morbidity and mortality as alternatives to ACE inhibitors as first-line therapy for patients with HF*r*EF, especially for patients already taking ARBs for other indications, unless contraindicated (Yancy et al., 2013).

Class IIb

Addition of an ARB may be considered in persistently symptomatic patients with HF*r*EF who are already being treated with an ACE inhibitor and a beta blocker in whom an aldosterone antagonist is not indicated or tolerated (Yancy et al., 2013).

Class III: Harm

Routine *combined* use of an ACE inhibitor, ARB, and aldosterone antagonist is potentially harmful for patients with HF*r*EF (Yancy et al., 2013).

For the hospitalized patient:

In patients with HF*r*EF experiencing a symptomatic exacerbation of heart failure (HF) requiring hospitalization during chronic maintenance treatment with guideline-directed medical therapy (GDMT), it is recommended that GDMT be continued in the absence of hemodynamic instability or contraindications.

Evidence for Rationale

American College of Cardiology Foundation (ACCF), American Heart Association (AHA), Physician Consortium for Performance ImprovementÂ® (PCPIÂ®). Heart failure performance measurement set. Chicago (IL): American Medical Association (AMA); 2016 Apr. 48 p. [29 references]

Konstam MA, Neaton JD, Dickstein K, Drexler H, Komajda M, Martinez FA, Riegger GA, Malbecq W, Smith RD, Guptha S, Poole-Wilson PA, HEAAL Investigators. Effects of high-dose versus low-dose losartan on clinical outcomes in patients with heart failure (HEAAL study): a randomised, double-blind trial. Lancet. 2009 Nov 28;374(9704):1840-8. PubMed

Yancy CW, Jessup M, Bozkurt B, Butler J, Casey DE Jr, Drazner MH, Fonarow GC, Geraci SA, Horwich T, Januzzi JL, Johnson MR, Kasper EK, Levy WC, Masoudi FA, McBride PE, McMurray JJ, Mitchell JE, Peterson PN, Riegel B, Sam F, Stevenson LW, Tang WH, Tsai EJ, Wilkoff BL. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2013 Oct 15;62(16):e147-239. [924 references] PubMed

Primary Health Components

Heart failure; left ventricular systolic dysfunction (left ventricular ejection fraction [LVEF] less than 40%); angiotensin-converting enzyme (ACE) inhibitor therapy; angiotensin receptor blocker (ARB) therapy

Denominator Description

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior left ventricular ejection fraction (LVEF) less than 40% (see the related "Denominator Inclusions/Exclusions"

field)

Numerator Description

Patients who were prescribed angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy either within a 12 month period when seen in the outpatient setting or at each hospital discharge (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Importance of Topic

Prevalence and Incidence

5.7 million Americans are living with heart failure - 2.6% of men and 2.1% of women.
Heart failure was the most common cardiac condition for adults 85 years and older in 1997–2006 (Levit et al., 2008).
Over 670,000 patients are diagnosed with heart failure for the first time each year.
Heart failure incidence approaches 10 per 1000 population after 65 years of age.
At 40 years of age, the lifetime risk of developing heart failure for both men and women is 1 in 5. At 80 years of age, remaining lifetime risk for development of new heart failure remains at 20% for men and women, even in the face of a much shorter life expectancy.
Data has indicated an increase in the incidence of heart failure and improved survival rate among the elderly, with both of these effects being greater in men.

Mortality

In 2005, 1 in 8 death certificates (292,214 deaths) in the United States mentioned heart failure.
Heart failure was selected as the "underlying cause" in 58,933 of those deaths.
80% of men and 70% of women less than 65 years of age who have heart failure will die within 8 years.
The 30-day, 1-year, and 5-year case fatality rates after hospitalization for heart failure were 10.4%, 22%, and 42.3%, respectively.
After heart failure is diagnosed, the survival rate is lower in men than in women, but less than 15% of women survive more than 8 to 12 years. The 1-year mortality rate is high, with 1 in 5 dying.
In people diagnosed with heart failure, sudden cardiac death occurs at 6 to 9 times the rate of the general population.

Office Visits and Hospital Stays

2006 data found that the number of ambulatory care visits for heart failure was 3,390,000.
Hospital discharges for heart failure rose from 877,000 in 1996 to 1,106,000 in 2006.
In 2006, heart failure (534,000 stays for males and 565,000 for females) occurred equally often in hospitalizations for males and females.
Fonarow and colleagues (2005) assessed length of stay and in-hospital mortality rates and the

variation among hospitals. The "median inpatient length of stay [was found to be] 4.0 days (range, 2.3-9.5 days), with an approximately 2-day difference between hospitals at the 10th (3.1 days) and 90th (5.0 days) percentiles. Median in-hospital mortality was 3.5%, with substantial variation between hospitals. There was a 2-fold difference in mortality between the 25th and 75th percentiles (2.4% vs 4.8%) and a 4.4-fold difference in mortality between the 10th and 90th percentiles (1.4% vs 6.1%)."

Within 1 year of hospitalization for heart failure, more than 1 in 3 Medicare beneficiaries died, and two-thirds were readmitted to the hospital. Nearly 40% of patients were admitted at least twice. Among patients enrolled in Medicare, the rate of 30-day readmission following hospital discharge with a heart failure diagnosis is 26.9% (Jencks, Williams, & Coleman, 2009).

Cost

For 2009, the estimated direct and indirect cost of heart failure in the United States is $37.2 billion (Lloyd-Jones et al., 2010).

U.S. hospital costs for treating patients with heart failure increased from $6.6 billion in 1997 to $11.2 billion in 2006 (a 6.1% annual increase).

More Medicare dollars are spent for the diagnosis and treatment of heart failure than for any other diagnosis (Jessup et al., 2009).

Opportunity for Improvement

According to a study analyzing the quality of health care in the U.S., on average, patients with heart failure received the recommended quality of care only about 63.9% of the time (McGlynn et al., 2003). Quality of care was assessed by analysis of clinician performance on 36 heart failure quality indicators. Quality of care varied significantly by indicator with average rates of adherence ranging from 16.12% for the provision of dietary counseling within one month of the start of medical treatment to 100% for blood pressure assessment at the time of presentation ("Appendix," 2003).

Using baseline data from the Registry to Improve the Use of Evidence-Based Heart Failure Therapies in the Outpatient Setting (IMPROVE HF), Fonarow and colleagues (2008) assessed contemporary care patterns for heart failure in the outpatient setting among 167 outpatient cardiology practices in the United States. The authors found that a median 27% of patients received all heart failure therapies for which they were potentially eligible and use of guideline-recommended therapies by practices varied widely. To quantify use of therapies, 7 individual metrics were assessed.

In another study, Fonarow and colleagues (2005) analyzed data from 81,142 admissions occurring between July 2002, and December 2003, at 223 hospitals in the United States to determine rates of conformity with the 4 Joint Commission core heart failure performance measures. Across all hospitals, median rates of conformity with HF-1 (discharge instructions), HF-2 (assessment of left ventricular function), HF-3 (use of angiotensin-converting enzyme [ACE] inhibitors in patients with left ventricular systolic dysfunction [LVSD]), and HF-4 (smoking cessation counseling) were 24.0%, 86.2%, 72.0%, and 43.2%, respectively. Rates of conformity at individual hospitals varied from 0% to 100%.

More recent national data available for the aforementioned core performance measures from the Joint Commission's Quality Check Web site indicates higher rates of adherence. From October 2007 through September 2008, performance was as follows (Joint Commission on Accreditation of Healthcare Organizations, 2009):

Joint Commission Core Heart Failure Performance Measures	Mean
HF-1 Discharge instructions	82.03%
HF-2 Assessment of left ventricular function	96.62%
HF-3 Use of ACE inhibitors in patients with LVSD	92.28%
HF-4 Smoking cessation counseling	97.25%

Geographic Variations in Care

The 2008 Dartmouth Atlas of Health Care identified geographic differences in the care of patients with chronic illness.

- Among the 306 hospital referral regions, the frequency of hospitalizations for heart failure varied by a factor of more than four.
- Patients with heart failure saw a physician 99.3 times in the last six months of life at the highest ranked hospital and 15.2 times at the lowest ranked (rankings based on U.S. News and World Report 2001) (Wennberg et al., 2008).

Disparities

The 2009 National Healthcare Disparities Report showed that disparities in care for heart failure exist across populations (Agency for Healthcare Research and Quality [AHRQ], 2010). Although the quality of hospital care for heart failure has improved overall, "care for whites continues to improve at a higher rate than for minority populations. Thus, quality improvement has not necessarily translated to disparities reduction, which is critical for high-quality care." Recommended hospital care for heart failure was characterized by evaluation of the patient's left ventricular ejection fraction (LVEF) and patient's receipt of an ACE inhibitor for left ventricular systolic dysfunction. Separately, to analyze patient centered care, a measure was included to identify adult hospital patients with heart failure who were given complete written discharge instructions.

- In 2006, the proportion of Medicare patients with heart failure who received recommended hospital care was higher for blacks than for whites (91.4% compared with 90%) (AHRQ, 2009).
- In 2006, the proportion of Medicare patients with heart failure who received recommended hospital care was lower for American Indians (AI) or Alaska Natives (AN) (86.3%) and Hispanics (89.3%) compared with whites (90%) (AHRQ, 2009).
- From 2005 to 2007, disparities in hospital care for heart failure for AI/ANs have been worsening at a rate of 12.4% per year.
- In all years (2005 to 2007), Hispanics and AI/ANs were less likely than whites to receive complete written discharge instructions.
- Rates of implantable cardioverter defibrillator (ICD) therapy in eligible patients hospitalized for heart failure are lower among eligible women and black patients than among white men (Hernandez et al., 2007; Curtis et al., 2007).
- Both patient age and sex are associated with reduced rates of some heart failure therapies: ICDs, anticoagulation for atrial fibrillation, and the provision of heart failure education (Yancy et al., 2009).
- An analysis of the American Heart Association's (AHA) Get With The Guidelines (GWTG)–Heart Failure quality improvement program (Yancy, Fonarow, & LaBresh, 2007) identified differences in heart failure in black, white, and Hispanic patients. Black patients were younger, had lower ejection fraction, lower risk of in-patient death and similar length of stay as whites and Hispanics. While overall quality of care was similar, there were some differences in the quality of care received by black, white and Hispanic patients. Performance on all performance measures under study were either similar or higher in black heart failure patients compared to white and Hispanic patients.

The Physician Consortium for Performance Improvement (PCPI) believes that performance measure data should be stratified by race, ethnicity, and primary written and spoken language to assess disparities and initiate subsequent quality improvement activities addressing identified disparities. These categories are consistent with recent national efforts to standardize the collection of race and ethnicity data. A 2008 National Quality Forum (NQF) report endorsed 45 practices including stratification by the aforementioned variables (NQF, 2008). A 2009 Institute of Medicine (IOM) report "recommends collection of the existing Office of Management and Budget (OMB) race and Hispanic ethnicity categories as well as more fine-grained categories of ethnicity (referred to as granular ethnicity and based on one's ancestry) and language need (a rating of spoken English language proficiency of less than very well and one's preferred language for health-related encounters)" ("Race," 2010).

Measure Importance

Opportunity for Improvement

Registry data from the outpatient setting has indicated that the use of ACE inhibitors or angiotensin receptor blockers (ARBs) in eligible patients without documented contraindications or intolerance remains suboptimal with an average of 80% of patients receiving the recommended treatment. This use varied widely among participating practices with rates of adherence ranging from 5.9% to 96.3%.

For patients hospitalized with heart failure, registry data indicates a higher rate of adherence with 84% of patients receiving an ACE inhibitor or ARB at discharge. More recent data from October 2007 through September 2008 indicates an even higher rate of adherence with a national average of 92.28% of patients with left ventricular systolic dysfunction being prescribed ACE inhibitor/ARB therapy.

Evidence for Additional Information Supporting Need for the Measure

Agency for Healthcare Research and Quality (AHRQ). 2009 National Healthcare Disparities Report. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Mar. 296 p.

Agency for Healthcare Research and Quality. NHQRDRnet data query system. [internet]. [accessed 2009 May 25].

American College of Cardiology Foundation (ACCF), American Heart Association (AHA), Physician Consortium for Performance ImprovementÂ® (PCPIÂ®). Heart failure performance measurement set. Chicago (IL): American Medical Association (AMA); 2016 Apr. 48 p. [29 references]

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Fonarow GC, Yancy CW, Heywood JT, ADHERE Scientific Advisory Committee, Study Group, and Investigators. Adherence to heart failure quality-of-care indicators in US hospitals: analysis of the ADHERE Registry. Arch Intern Med. 2005 Jul 11;165(13):1469-77. PubMed

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Lloyd-Jones D, Adams RJ, Brown TM, Carnethon M, Dai S, De Simone G, Ferguson TB, Ford E, Furie K, Gillespie C, Go A, Greenlund K, Haase N, Hailpern S, Ho PM, Howard V, Kissela B, Kittner S, Lackland D, Lisabeth L, Marelli A, McDermott MM, Meigs J, Mozaffarian D, Mussolino M, Nichol G, Roger VL, Rosamond W, Sacco R, Sorlie P, Roger VL, Thom T, Wasserthiel-Smoller S, Wong ND, Wylie-Rosett J, American Heart Association Statistics Committee and Stroke Statistics, Writing Group Members. Heart disease and stroke statistics--2010 update: a report from the American Heart Association. Circulation. 2010 Feb 23;121(7):e46-e215. PubMed

McGlynn EA, Asch SM, Adams J, Keesey J, Hicks J, DeCristofaro A, Kerr EA. The quality of health care delivered to adults in the United States. N Engl J Med. 2003 Jun 26;348(26):2635-45. PubMed

National Quality Forum. Closing the disparities gap in healthcare quality with performance measurement and public reporting. Washington (DC): National Quality Forum; 2008 Aug. (Issue brief; no. 10).

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Extent of Measure Testing

Several of the American College of Cardiology/American Heart Association/Physician Consortium for Performance Improvement (ACC/AHA/PCPI) heart failure measures presented here represent updates to existing inpatient and outpatient measures for heart failure. They have therefore been utilized, in their previous specifications, in several national performance measurement projects, including the Centers for Medicare & Medicaid Services (CMS) Physician Group Practice (PGP) Demonstration Project ("Medicare," 2009), the Doctor's Office Quality (DOQ) Project ("DOQ," 2009; "Doctor's," 2005), the DOQ-Information Technology (IT) Project ("DOQ," 2009), and the CMS Physician Quality Reporting Initiative (PQRI) Project (CMS, 2009). These projects have shown varying levels of feasibility, reliability, and performance, dependent upon the venue and modality of data collection. In addition, specific research projects have been conducted to test the reliability of these measures in various settings. Results of these testing projects have been considered and resulted in modifications to the measures, where appropriate.

Feasibility Testing

The CMS DOQ Project ("DOQ," 2009; "Doctor's," 2005) revealed that 4 of the 7 measures studied from the heart failure set are feasible to collect, as previously specified. As part of the DOQ Project, reviewers assessed the feasibility of use of the ACCF/AHA/PCPI measures in offices by performing retrospective audits of paper medical records and electronic health records (EHRs). A study by Baker et al. (2006)

utilizing an EHR system found that all 4 measures studied were feasible to collect, though automated review was found to be less accurate than manual review. Implementation in the PQRI (CMS, 2009) program allowed for tracking of denominator mismatch rates. It is important to note that physicians participating in PQRI for heart failure measures in 2007 represented a small proportion of the eligible physicians (4.77%-4.88%) and therefore the measure performance rates may not accurately reflect the ability of the general physician population to attain quality performance.

Reliability Testing

The DOQ Project ("DOQ," 2009; "Doctor's," 2005) tested inter-rater reliability twice during the project. The agreement rate for the heart failure measures was 92.9%.

An observational study by Baker et al. (2006) compared automated review of EHR data with automated review followed by manual review of electronic notes for patients with apparent quality deficits (hybrid review). Performance based on automated review of EHR data was similar to that based on hybrid review for 3 of the 4 measures studied, though performance was better in the hybrid review for all cases. Overall, failure to recognize contraindications to medications documented only in provider notes caused performance on medication-based quality measures to be underestimated.

The Cardio-HIT study is in progress ("Preliminary," n.d.) testing heart failure measures in 6 physician offices with 5 different EHRs, in use for at least 5 years at time of project. As part of the project, the integrated measure specifications were translated to data fields within the practice EHR. Records for 46,737 eligible patients were reviewed. Final results from this project are expected to be available soon. The results regarding exception rate reporting will be analyzed to determine if any changes to the measures are required.

Testing of the Measurement Set

The American Medical Association (AMA)-convened PCPI collaborated on several measure testing projects in 2007, 2009 and 2015 to ensure two Heart Failure measures are reliable and were evaluated for accuracy of the measure denominator, numerator and exception case identification. The testing projects were conducted utilizing EHR and registry data. Parallel forms reliability and signal-to-noise reliability were tested.

One site participated in the parallel forms testing of the measures. The site was an academic, general internal medicine clinic.

Signal-to-noise reliability was assessed using 2013 data acquired from the CMS Physician Quality Reporting System Group Practice Reporting Option (GPRO) database.

Measures Tested

- Heart Failure – Beta Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)
- Heart Failure – Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) for LVSD

Reliability Testing

The purpose of reliability testing was to evaluate whether the measure definitions and specifications, as prepared by the PCPI, yield stable, consistent measures. Data abstracted from electronic health records were used to calculate parallel forms reliability and data acquired from the GPRO database were used to perform signal-to-noise reliability testing for the measures.

Heart Failure – ACE Inhibitor or ARB Therapy for LVSD

<u>Parallel Forms Reliability Testing</u>

Of the 254 patients sampled, automated EHR review detected 217 (85.4%) with an active electronic prescription for an ACE inhibitor or ARB. Of the remaining 37 patients, 23 (62.2%) met one or more of the exclusion criteria. Performance on the ACE inhibitor and ARB quality measure was 93.9% by using

automated EHR review. The automated quality assessment had a sensitivity of 97.7% for identifying patients with heart failure taking an ACE inhibitor or ARB. The automated quality assessment captured 21 of 29 patients with valid exclusion criteria (sensitivity, 72.4%), and 2 of 23 patients who met exclusion criteria were judged not to have a true exclusion.

Signal-to-Noise Reliability Testing

GPRO Registry

The reliability at the minimum level of quality reporting events (10) was 0.83. The average number of quality reporting events for physicians included is 31.5. The reliability at the average number of quality reporting events was 0.94. This measure has high reliability when evaluated at the minimum level of quality reporting events and high reliability at the average number of quality events.

Evidence for Extent of Measure Testing

American College of Cardiology Foundation (ACCF), American Heart Association (AHA), Physician Consortium for Performance ImprovementÂ® (PCPIÂ®). Heart failure performance measurement set. Chicago (IL): American Medical Association (AMA); 2016 Apr. 48 p. [29 references]

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State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Hospital Inpatient

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Equity

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Encounter

Institutionalization

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All patients aged 18 years and older with a diagnosis of heart failure with a current or prior left ventricular ejection fraction (LVEF) less than 40%

Eligible Population:

Age greater than or equal to 18 years

AND

> Diagnosis for heart failure (refer to the original measure documentation for International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] codes [reportable through 9/30/2015])
> Diagnosis for heart failure (refer to the original measure documentation for International Classification of Diseases, Tenth Revision, Clinical Modification [ICD-10-CM] codes [reportable beginning 10/1/2015])

AND

Current Procedural Terminology (CPT) codes for encounter (refer to the original measure documentation for CPT codes)

AND

Specific CPT Category II codes for LVEF less than 40% or moderately or severely depressed left ventricular systolic function (refer to the original measure documentation for specific CPT codes)

Note: LVEF less than 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

Exclusions
None

Exceptions

> Documentation of medical reason(s) for not prescribing angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (e.g., hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)
> Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (e.g., patient declined, other patient reasons)
> Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (e.g., other system reasons)

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Patients who were prescribed* angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy either within a 12 month period when seen in the outpatient setting or at each hospital discharge

Note: Refer to the original measure documentation for administrative codes.

*Prescribed may include:

> *Outpatient Setting*: Prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list.
> *Inpatient Setting*: Prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list.

Exclusions
None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Electronic health/medical record

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

None

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Measure #7: angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy for left ventricular systolic dysfunction (LVSD) (outpatient and inpatient setting).

Measure Collection Name

AMA/PCPI Heart Failure Performance Measurement Set

Submitter

American Medical Association - Medical Specialty Society

Developer

Physician Consortium for Performance ImprovementÂ® - Clinical Specialty Collaboration

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

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Financial Disclosures/Other Potential Conflicts of Interest

Conflicts, if any, are disclosed in accordance with the Physician Consortium for Performance Improvement® conflict of interest policy.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2016 Feb 19

Core Quality Measures

Cardiology

Measure Initiative(s)

Physician Quality Reporting System

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2016 Apr

Measure Maintenance

The Physician Consortium for Performance Improvement (PCPI) stipulates a regular review of measures

(every 3-4 years) or when there is a major change in scientific evidence, results from testing or other issues noted that materially affect the integrity of the measure.

Date of Next Anticipated Revision

2017 Apr

Measure Status

This is the current release of the measure.

This measure updates a previous version: American College of Cardiology Foundation, American Heart Association, Physician Consortium for Performance Improvement®. Heart failure performance measurement set. Chicago (IL): American Medical Association; 2011 Jan. 85 p. [51 references].

Measure Availability

Source available from the American Medical Association (AMA)-convened Physician Consortium for Performance Improvement® Web site .

For further information, please contact AMA staff by e-mail at cqi@ama-assn.org.

NQMC Status

This NQMC summary was completed by ECRI on March 3, 2004. The information was verified by the measure developer on October 29, 2004.

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This NQMC summary was updated again by ECRI Institute on June 22, 2016. The information was verified by the measure developer on June 27, 2016.

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For more information, contact the American Medical Association, Clinical Performance Evaluation, 330 N. Wabash Ave, Chicago, IL 60611.

Production

Source(s)

American College of Cardiology Foundation (ACCF), American Heart Association (AHA), Physician Consortium for Performance ImprovementÂ® (PCPIÂ®). Heart failure performance measurement set. Chicago (IL): American Medical Association (AMA); 2016 Apr. 48 p. [29 references]

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