



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

### Brief Measure Information

**NQF #: 2458**

**De.2. Measure Title:** Heart Failure (HF): Left Ventricular Function (LVF) Testing

**Co.1.1. Measure Steward:** Centers for Medicare & Medicaid Services

**De.3. Brief Description of Measure:** Percentage of patients 18 years and older with Left Ventricular Function (LVF) testing performed within the previous 12 months for patients who are hospitalized with a principal diagnosis of Heart Failure (HF) during the reporting period

**1b.1. Developer Rationale:** The aim of this quality measure is to allow eligible providers to report left ventricular testing performed for those patients hospitalized with heart failure. Evaluation of LVF in HF patients provides important clinical information required to diagnose, monitor and direct appropriate treatment. (Bonow et al., 2012; McKelvie et al., 2013; McMurray et al., 2012) National guidelines advocate the evaluation of left ventricular systolic function as the single most important diagnostic test in the management of all patients with HF. (McMurray et al., 2012; McKelvie et al., 2013).

Heart failure (HF) is associated with impaired ventricular function, either reduced or preserved systolic function (ejection fraction). Treatment to reduce morbidity and mortality requires evaluation to determine the extent of impairment, through ventricular function testing (Bonow et al., 2012; McKelvie et al., 2013; McMurray et al., 2012).

The pathophysiology of HF is diverse and many patients remain asymptomatic despite significant dysfunction. Impaired ventricular function, however, is a definitive characteristic of heart failure and the cornerstone of evaluation when HF is suspected (McKelvie et al., 2013; McMurray et al., 2012).

Echocardiography has been recognized as the gold standard for LVF evaluation, (McMurray et al., 2012; Ananthasubramaniam, 2011; Penicka, 2010). Echocardiography is the recommended left ventricular function evaluation test of choice due to reasons of accuracy, availability, safety and cost (McKelvie et al., 2013; McMurray et al., 2012). Two-dimensional echocardiography with Doppler should be performed during initial evaluation of patients presenting with HF to assess LVF, left ventricular size, wall thickness, and valve function. Radionuclide ventriculography can be performed to assess LVF and volumes. (McKelvie et al., 2013; McMurray et al., 2012; Jessup et al., 2009; Lindenfeld et al., 2010).

An echocardiogram to confirm the diagnosis of heart failure and/or cardiac dysfunction is mandatory and should be performed shortly following suspicion of the diagnosis of HF (McKelvie et al., 2013; McMurray et al., 2012).

Repeat measurement of EF and the severity of structural remodeling can be useful to provide information in patients with HF who have had a change in clinical status or who have experienced or recovered from a clinical event or received treatment that might have had a significant effect on cardiac function (McKelvie et al., 2013; Jessup et al., 2009; Lindenfeld et al., 2010).

**S.4. Numerator Statement:** Patients with LVF testing performed within the previous 12 months who were hospitalized with a principal diagnosis of heart failure

**S.7. Denominator Statement:** All patients aged 18 years and older hospitalized with a principal diagnosis of HF during the reporting period

**S.10. Denominator Exclusions:** A patient is not eligible if one or more of the following reasons exist:

- Patient refuses LVF testing
- Other reason documented by the eligible professional the patient is not eligible for LVF testing

**De.1. Measure Type:** Process

**S.23. Data Source:** Electronic Clinical Data : Registry

**S.26. Level of Analysis:** Clinician : Group/Practice, Clinician : Individual

**IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date:**

**IF this measure is included in a composite, NQF Composite#/title:**

IF this measure is paired/grouped, NQF#/title:

**De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?**

## 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.**

### 1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

[LVF\\_Testing\\_MeasSubm\\_Evidence\\_PQRS228\\_122313.pdf](#)

### 1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

#### 1b.1. Briefly explain the rationale for this measure (e.g., the benefits or improvements in quality envisioned by use of this measure)

The aim of this quality measure is to allow eligible providers to report left ventricular testing performed for those patients hospitalized with heart failure. Evaluation of LVF in HF patients provides important clinical information required to diagnose, monitor and direct appropriate treatment. (Bonow et al., 2012; McKelvie et al., 2013; McMurray et al., 2012) National guidelines advocate the evaluation of left ventricular systolic function as the single most important diagnostic test in the management of all patients with HF. (McMurray et al., 2012; McKelvie et al., 2013).

Heart failure (HF) is associated with impaired ventricular function, either reduced or preserved systolic function (ejection fraction). Treatment to reduce morbidity and mortality requires evaluation to determine the extent of impairment, through ventricular function testing (Bonow et al., 2012; McKelvie et al., 2013; McMurray et al., 2012).

The pathophysiology of HF is diverse and many patients remain asymptomatic despite significant dysfunction. Impaired ventricular function, however, is a definitive characteristic of heart failure and the cornerstone of evaluation when HF is suspected (McKelvie et al., 2013; McMurray et al., 2012).

Echocardiography has been recognized as the gold standard for LVF evaluation, (McMurray et al., 2012; Ananthasubramaniam, 2011; Penicka, 2010). Echocardiography is the recommended left ventricular function evaluation test of choice due to reasons of accuracy, availability, safety and cost (McKelvie et al., 2013; McMurray et al., 2012). Two-dimensional echocardiography with Doppler should be performed during initial evaluation of patients presenting with HF to assess LVF, left ventricular size, wall thickness, and valve function. Radionuclide ventriculography can be performed to assess LVF and volumes. (McKelvie et al., 2013; McMurray et al., 2012; Jessup et al., 2009; Lindenfeld et al., 2010).

An echocardiogram to confirm the diagnosis of heart failure and/or cardiac dysfunction is mandatory and should be performed shortly following suspicion of the diagnosis of HF (McKelvie et al., 2013; McMurray et al., 2012).

Repeat measurement of EF and the severity of structural remodeling can be useful to provide information in patients with HF who have had a change in clinical status or who have experienced or recovered from a clinical event or received treatment that might have had a significant effect on cardiac function (McKelvie et al., 2013; Jessup et al., 2009; Lindenfeld et al., 2010).

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.**

Variation of performance rates was analyzed to determine central tendency, standard deviation and quartile values.

2011 Registry Data

N (practices with >10 cases) 41

Mean performance score 90.70%

Standard deviation 0.086

Max score 100%  
90th percentile 100%  
75th percentile 96.70%  
Median 92.30%  
25th percentile 86.20%  
10th percentile 79.30%

2012 Registry Data

N (practices with >10 cases) 13  
Mean performance score 97.40%  
Standard deviation 0.059

Max score 100%  
90th percentile 100%  
75th percentile 100%  
Median 100%  
25th percentile 100%  
10th percentile 90.00%

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

N/A

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.**

N/A

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.**

In the United States, the lifetime risk for developing heart failure is 20% for people over the age of 40 years old. The incidence of heart failure increases with age and those persons over the age of 65 years are most susceptible.

Disparities in the epidemiology of heart failure have been identified in certain groups. Blacks have the highest risk of heart failure while white women have the lowest risk as noted in the 2013 ACCF/AHA Heart Failure Guidelines (Yancy CW, Jessup M, Bozkurt, et al. 2013). After Blacks, the next highest group to develop heart failure are Hispanics followed by White and Chinese Americans (Go AS, Mozaffarian D, Roger VL, et. al. 2013).

In addition, Blacks have a greater 5-year mortality rate than whites.

Hypertension is the single most important modifiable risk factor and those men and women with hypertension have a substantially greater risk of developing heart failure than normotensive individuals.

Obesity and insulin resistance increases risk for developing heart failure. Clinical diabetes mellitus markedly increases the likelihood of developing heart failure and adversely affects heart failure outcomes. Individuals with metabolic syndrome and atherosclerotic heart disease are also more likely to develop heart failure as described in the Heart and Stroke Statistics – 2014 Update (Yancy CW, Jessup M, Bozkurt, et. al. 2013). Heart failure incidence rates in black women are similar to those of men rather than to white women.

Measurement of LVF testing varied by race in that white and black individuals had testing performed 96% of the time but Hispanic individuals had testing done only 92% of the time as noted in Heart and Stroke Statistics – 2014 Update (Yancy CW, Jessup M, Bozkurt, et. al. 2013).

In the American College of Cardiology Foundation/ AHA/PCPI's research paper, the investigators noted that 55% of Medicare beneficiaries' received at least one echocardiogram in an outpatient setting. The researcher also noted that 2.5% had 3 or more

echocardiograms (overuse) (Bonow RO, Ganiats TG, Beam CT, et. al. 2012)

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 JJV, Mitchell JE, Peterson PN, Riegel B, Sam F, Stevenson LW, Tang WHW, 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. *Circulation*. 2013;128:e240–e327. Retrieved from: <http://circ.ahajournals.org/content/128/16/e240>

Go AS, Mozaffarian D, Roger VL, Benjamin EJ, Berry JD, Blaha MJ, Dai S, Ford ES, Fox CS, Franco S, Fullerton HJ, Gillespie C, Hailpern SM, Heit JA, Howard VJ, Huffman MD, Judd SE, Kissela BM, Kittner SJ, Lackland DT, Lichtman JH, Lisabeth LD, Mackey RH, Magid DJ, Marcus GM, Marelli A, Matchar DB, McGuire DK, Mohler ER 3rd, Moy CS, Mussolino ME, Neumar RW, Nichol G, Pandey DK, Paynter NP, Reeves MJ, Sorlie PD, Stein J, Towfighi A, Turan TN, Virani SS, Wong ND, Woo D, Turner MB; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation*. 2014;129:…….Retrieved at: <http://circ.ahajournals.org/content/early/2013/12/18/01.cir.0000441139.02102.80>

Bonow RO, Ganiats TG, Beam CT, Blake K, Casey DE Jr, Goodlin SJ, Grady KL, Hundley RF, Jessup M, Lynn TE, Masoudi FA, Nilasena D, Pin~a IL, Rockswold PD, Sadwin LB, Sikkema JD, Sincak CA, Spertus J, Torcson PJ, Torres E, Williams MV, Wong JB. ACCF/AHA/AMA-PCPI 2011 performance measures for adults with heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Performance Measures and the American Medical Association–Physician Consortium for Performance Improvement. *Circulation*. 2012;125:2382–2401. Retrieved from: <http://circ.ahajournals.org/content/125/19/2382>

**1c. High Priority** (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

**1c.1. Demonstrated high priority aspect of healthcare**

Affects large numbers, A leading cause of morbidity/mortality

**1c.2. If Other:**

**1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare.**

**List citations in 1c.4.**

The American Heart Association reports that an estimated 5.1 million Americans over the age of 20 years have heart failure. Projections show that the prevalence of heart failure will increase to an estimated 8 million people by the year 2030. Over 825,000 new cases are identified annually. In 2010, 1 in 9 death certificates list heart failure resulting in an 84% any-mention death rate (Go AS, Mozaffarian D, Roger VL, et. al. 2013).

In 2012, the total cost for heart failure was estimated to be \$30.7 million. Of this total, 68% was attributable to direct medical costs. By the year 2030, the total cost of heart failure will increase by 127% to \$69.7 billion dollars. This is equal to \$244.00 for every adult (Go AS, Mozaffarian D, Roger VL, et. al. 2013).

Heart failure is the primary diagnosis in >1 million hospitalizations annually and are at a high risk of all-cause re-hospitalization, with a one month readmission rate of 25%. In 2013, physician office visits for heart failure cost \$1.8 billion (Yancy CW, Jessup M, Bozkurt, et. al. 2013).

Heart failure mortality is approximately 50% within 5 years of diagnosis (Yancy CW, Jessup M, Bozkurt, et. al. 2013).

**1c.4. Citations for data demonstrating high priority provided in 1a.3**

Go AS, Mozaffarian D, Roger VL, Benjamin EJ, Berry JD, Blaha MJ, Dai S, Ford ES, Fox CS, Franco S, Fullerton HJ, Gillespie C, Hailpern SM, Heit JA, Howard VJ, Huffman MD, Judd SE, Kissela BM, Kittner SJ, Lackland DT, Lichtman JH, Lisabeth LD, Mackey RH, Magid DJ, Marcus GM, Marelli A, Matchar DB, McGuire DK, Mohler ER 3rd, Moy CS, Mussolino ME, Neumar RW, Nichol G, Pandey DK, Paynter NP, Reeves MJ, Sorlie PD, Stein J, Towfighi A, Turan TN, Virani SS, Wong ND, Woo D, Turner MB; on behalf of the American Heart

Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation*. 2014;129:.....Retrieved at:  
<http://circ.ahajournals.org/content/early/2013/12/18/01.cir.0000441139.02102.80>

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 JJV, Mitchell JE, Peterson PN, Riegel B, Sam F, Stevenson LW, Tang WHW, 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. *Circulation*. 2013;128:e240–e327. Retrieved from:  
<http://circ.ahajournals.org/content/128/16/e240>

**1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)**

N/A

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

Cardiovascular, Cardiovascular : Congestive Heart Failure, Cardiovascular : Screening, Prevention : Screening

**De.6. Cross Cutting Areas** (check all the areas that apply):

Prevention : Screening, Safety

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)  
[http://www.cms.gov/apps/ama/license.asp?file=/pqrs/downloads/2013\\_PQRS\\_IndClaimsRegistry\\_MeasureSpec\\_SupportingDocs\\_12192012.zip](http://www.cms.gov/apps/ama/license.asp?file=/pqrs/downloads/2013_PQRS_IndClaimsRegistry_MeasureSpec_SupportingDocs_12192012.zip) This is a link to a zip file which contains all of the 2013 PQRS measure specifications supporting documents.

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure Attachment:

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

No data dictionary Attachment:

**S.3. For endorsement maintenance**, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

N/A –This submission is for Initial Endorsement and not endorsement Maintenance

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)  
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.  
Patients with LVF testing performed within the previous 12 months who were hospitalized with a principal diagnosis of heart failure

**S.5. Time Period for Data** (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

The time period for data is a 12 month window from January 1st to December 31st in the reporting or measurement period

**S.6. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)  
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Definitions:

Left ventricular function (LVF) testing - Assessment of the hearts function to determine the stroke volume (SV), the end-diastolic volume (EDV), and the ejection fraction (EF).

Stroke volume (SV) - The amount of blood in the heart that exits the ventricles with each beat.

End-diastolic volume (EDV) - The total amount of blood in the ventricles at the end of diastole

Ejection fraction (EF) - The proportion of the volume of blood in the ventricles at the end of diastole that is ejected during systole. EF is expressed as a percentage and is calculated by dividing the (SV) by the (EDV).

G-codes are defined as Quality Data Codes (QDCs), which are subset of HCPCs II codes. QDCs are non-billable codes that providers will use to delineate their clinical quality actions, which are submitted with Medicare Part B Claims. There are 3 G Codes for this measure.

LVF testing performed during the measurement period (G8682)

LVF testing not performed for a documented reason (G8683)

LVF testing is not performed, reason not given (G8685)

**S.7. Denominator Statement** (Brief, narrative description of the target population being measured)

All patients aged 18 years and older hospitalized with a principal diagnosis of HF during the reporting period

**S.8. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

Populations at Risk, Senior Care

**S.9. Denominator Details** (All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

Denominator includes patients seen during the reporting period with a Principal diagnosis for HF (ICD-9-CM): 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.0, 428.1, 428.20, 428.21, 428.22, 428.23, 428.30, 428.31, 428.32, 428.33, 428.40, 428.41, 428.42, 428.43, 428.9

Principal diagnosis for HF (ICD-10-CM) [REFERENCE ONLY/Not Reportable]: I11.0, I13.0, I13.2, I50.1, I50.20, I50.21, I50.22, I50.23, I50.30, I50.31, I50.32, I50.33, I50.40, I50.41, I50.42, I50.43, I50.9

AND

Patient encounter during reporting period (CPT): 99221, 99222, 99223, 99231, 99232, 99233, 99238, 99239, 99291

**S.10. Denominator Exclusions** (Brief narrative description of exclusions from the target population)

A patient is not eligible if one or more of the following reasons exist:

- Patient refuses LVF testing
- Other reason documented by the eligible professional the patient is not eligible for LVF testing

**S.11. Denominator Exclusion Details** (All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

G-codes are defined as Quality Data Codes (QDCs), which are subset of HCPCs II codes. QDCs are non-billable codes that providers will use to delineate their clinical quality actions, which are submitted with Medicare Part B Claims.

There is one G-code to signify a Denominator Exclusion:

LVF testing not performed for a documented reason (G8683)



**S.12. Stratification Details/Variables** (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)

No stratification in this measure. All eligible patients are subject to the same numerator criteria.

**S.13. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)

No risk adjustment or risk stratification

If other:

**S.14. Identify the statistical risk model method and variables** (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)

N/A

**S.15. Detailed risk model specifications** (must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)

Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

**S.15a. Detailed risk model specifications** (if not provided in excel or csv file at S.2b)

**S.16. Type of score:**

Rate/proportion

If other:

**S.17. Interpretation of Score** (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

**S.18. Calculation Algorithm/Measure Logic** (Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)

Performance Calculation: For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator, Performance Denominator and Denominator Exclusions.

Numerator (A) Includes: Number of patients meeting numerator criteria

Performance Denominator (PD) Includes: Number of patients meeting criteria for denominator inclusion

Denominator Exclusions (B) Include: Number of patients with valid denominator exclusions

The method of performance calculation is determined by the following:

1) Identify the patients who meet the eligibility criteria for the denominator (PD) which includes patients who are 18 years and older on date of encounter

AND

Principal diagnosis for HF (ICD-9-CM): 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.0, 428.1, 428.20, 428.21, 428.22, 428.23, 428.30, 428.31, 428.32, 428.33, 428.40, 428.41, 428.42, 428.43, 428.9

Principal diagnosis for HF (ICD-10-CM) [REFERENCE ONLY/Not Reportable]: I11.0, I13.0, I13.2, I50.1, I50.20, I50.21, I50.22, I50.23, I50.30, I50.31, I50.32, I50.33, I50.40, I50.41, I50.42, I50.43, I50.9

AND

Patient encounter during reporting period (CPT® codes): 99221, 99222, 99223, 99231, 99232, 99233, 99238, 99239, 99291

- 2) Identify which of those patients meet the numerator criteria (G8682, G8685) (A); and  
 3) For those patients who do not meet the numerator criteria, determine whether an appropriate exclusion applies (G8683) (B) and subtract those patients from the denominator.

Numerator (A)

-----  
 Performance Denominator (PD) - Denominator Exclusions (B)

Exclusion Calculation – The percentage of Denominator Valid (PD) patients with Denominator Exclusions (B) as calculated by the following:

Denominator Exclusions (B)

-----  
 Performance Denominator (PD)

**S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment** (You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)  
 Available in attached appendix at A.1

**S.20. Sampling** (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF a PRO-PM, identify whether (and how) proxy responses are allowed.

N/A

**S.21. Survey/Patient-reported data** (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

N/A

**S.22. Missing data** (specify how missing data are handled, e.g., imputation, delete case.)

Required for Composites and PRO-PMs.

N/A

**S.23. Data Source** (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.24.

Electronic Clinical Data : Registry

**S.24. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

It is Clinical Registry data from Eligible Providers.

**S.25. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

No data collection instrument provided

**S.26. Level of Analysis** (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Clinician : Group/Practice, Clinician : Individual

**S.27. Care Setting** (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital

If other:

**S.28. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

N/A



**2a. Reliability – See attached Measure Testing Submission Form**  
**2b. Validity – See attached Measure Testing Submission Form**  
[MeasSubm\\_MeasTesting\\_HF\\_LVF\\_Testing\\_PQRS\\_228\\_122313.pdf](#)

### 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

#### 3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

##### 3a.1. Data Elements Generated as Byproduct of Care Processes.

[Generated or collected by and used by healthcare personnel during the provision of care \(e.g., blood pressure, lab value, diagnosis, depression score\), Coded by someone other than person obtaining original information \(e.g., DRG, ICD-9 codes on claims\), Abstracted from a record by someone other than person obtaining original information \(e.g., chart abstraction for quality measure or registry\)](#)

If other:

#### 3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields?** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*)

[ALL data elements are in defined fields in electronic clinical data \(e.g., clinical registry, nursing home MDS, home health OASIS\)](#)

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.**

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.**

Attachment:

#### 3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

**IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.**

[The testing data was limited due to the small number of provider data in the sample. The measure may not have been widely adopted for the sample tested. The processes being reported in this measure would not be influenced by patient characteristics, settings or other factors outside of the provider's control.](#)

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** (*e.g., value/code set, risk model, programming code, algorithm*).

[N/A](#)

## 4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

#### 4.1. Current and Planned Use

*NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.*

Planned	Current Use (for current use provide URL)
	<a href="#">Public Reporting Physician Quality Reporting System</a> <a href="http://www.cms.gov/PQRS">http://www.cms.gov/PQRS</a>
	<a href="#">Payment Program Physician Quality Reporting System</a> <a href="http://www.cms.gov/PQRS">http://www.cms.gov/PQRS</a>

#### 4a.1. For each CURRENT use, checked above, provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included

2014 Physician Fee Schedule Final Rule – on display at the Federal Register as of 11/27/13 and published on 12/10/13

<http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR&browsePath=2013%2F12%2F12-10%5C%2F3%2FCenters+for+Medicare+%26amp%3B+Medicaid+Services&isCollapsed=false&leafLevelBrowse=false&isDocumentResults=true&ycord=484>

Public Use: :\* Physician Quality Reporting System is sponsored by Centers for Medicare and Medicaid Services; PQRS is a national reporting program that uses a combination of incentive payments and payment adjustments to promote reporting of quality information by eligible professionals (EPs). The program provides an incentive payment to practices with EPs. EPs satisfactorily report data on quality measures for covered Physician Fee Schedule (PFS) services furnished to Medicare Part B Fee-for-Service (FFS) beneficiaries.

**4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)**

N/A

**4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)**

N/A

### 4b. Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)**

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)
- Geographic area and number and percentage of accountable entities and patients included

N/A This measure is applying for Initial Endorsement

**4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

N/A

**4c. Unintended Consequences**

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.**

**5. Comparison to Related or Competing Measures**

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

**5. Relation to Other NQF-endorsed Measures**

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

Yes

**5.1a. List of related or competing measures (selected from NQF-endorsed measures)**

0079 : Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting)

0135 : Evaluation of Left ventricular systolic function (LVS)

**5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.**

**5a. Harmonization**

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

**5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**

**Are the measure specifications completely harmonized?**

No

**5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**

Harmonization addresses measures with the same measure focus or the same target population. Related Measure: NQF 0079 Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting) NQF measures 0135 and 0079 both address patients aged 18 and older with a heart failure diagnosis and require an assessment of left ventricular function assessment. The difference is that NQF measures 0135 and 0079 are outpatient measures and allow the testing to be done at any time before, during or after admission (0135) or any time in the past (0079). Our measure, PQRS # 228 requires left ventricular function testing to be completed

within the past 12 months for those patients hospitalized with a primary diagnosis of heart failure.

**5b. Competing Measures**

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

**5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**

**Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)**

Competing Measure: NQF 0135 Evaluation of Left ventricular systolic function (LVS)

The difference is that CMS/QIP measure does not require documentation in the hospital record as NQF 0135 does. In our measure, documentation can be derived anytime in the reporting period (12 months) and found in other places such as the physician's office as well as the hospital record. Our measure is broader in that aspect because it is an outpatient measure and allows more EP's to report.

**Appendix**

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

**Attachment** **Attachment:** [NQF\\_Summary\\_Materials\\_CMS\\_and\\_QIP\\_PQRS\\_228\\_HF\\_LVF\\_Testing\\_122313.pdf](#)

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**Co.1 Measure Steward (Intellectual Property Owner):** Centers for Medicare & Medicaid Services

**Co.2 Point of Contact:** Helen, Dollar-Maples, [Helen.Dollar-Maples@cms.hhs.gov](mailto:Helen.Dollar-Maples@cms.hhs.gov), 410-786-7214-

**Co.3 Measure Developer if different from Measure Steward:** Centers for Medicare and Medicaid Services

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**Additional Information**

**Ad.1 Workgroup/Expert Panel involved in measure development**

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

Through a collaborative process, the Technical Expert Panel (TEP) reviewed the current 2013 measure specifications (description, numerator, denominator, definitions, clinical recommendation, and environmental scan); reviewed

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**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:** 2011

**Ad.3 Month and Year of most recent revision:** 09, 2013

**Ad.4 What is your frequency for review/update of this measure?** Annual

**Ad.5 When is the next scheduled review/update for this measure?** 08, 2014

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**Ad.7 Disclaimers:** This measure and specifications are provided "as is" without warranty of any kind. This measure does not represent a practice guideline.

**Ad.8 Additional Information/Comments:** Release Notes Each Year

Year	Changes
2011	n/a (New Measure)
2012	<ul style="list-style-type: none"> <li>Updated Measure Owner</li> <li>Updated Description, Denominator, and Numerator</li> <li>Added Definition of Not Eligible</li> </ul>

- Deleted Numerator Instructions

2013

- Updated Description, Instructions, Denominator Statement , Numerator Options Descriptions, Numerator Definitions, Rationale, and Clinical Recommendation Statements
- Added to Denominator Coding, ICD-10CM
- Added Numerator Definitions, Left ventricular function (LVF) Testing, Stroke volume (SV), End-diastolic volume (EDV), and Ejection Fraction (EF)