



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 sub criterion 1b).

Brief Measure Information

NQF #: 0070e

Corresponding Measures: 0070

De.2. Measure Title: Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)

Co.1.1. Measure Steward: PCPI Foundation

De.3. Brief Description of Measure: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12-month period who also have a prior MI or a current or prior LVEF <40% who were prescribed beta-blocker therapy

1b.1. Developer Rationale: For patients with coronary artery disease (CAD), beta-blockers are recommended for 3 years after myocardial infarction or acute coronary syndrome. Beta-blockers, particularly carvedilol, metoprolol succinate, or bisoprolol which have been shown to reduce risk of death, are recommended indefinitely for patients with CAD and LV systolic dysfunction. These agents have proven efficacy in reducing angina onset and improving the ischemic threshold during exercise. In patients who have suffered an MI, beta-blockers significantly reduce deaths and recurrent MIs. (1) Nonadherence to cardioprotective medications is prevalent among outpatients with CAD and can be associated with a broad range of adverse outcomes, including all-cause and cardiovascular mortality, cardiovascular hospitalizations, and the need for revascularization procedures.(2) This measure is intended to promote beta-blocker usage in select patients with CAD.

References:

1. Fihn SD, Gardin JM, Abrams J, Berra K, Blankenship JC, Dallas AP, Douglas PS, Foody JM, Gerber TC, Hinderliter AL, King SB III, Kligfield PD, Krumholz HM, Kwong RYK, Lim MJ, Linderbaum JA, Mack MJ, Munger MA, Prager RL, Sabik JF, Shaw LJ, Sikkema JD, Smith CR Jr, Smith SC Jr, Spertus JA, Williams SV. 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and management of patients with stable ischemic heart disease: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, American Association for Thoracic Surgery, Preventive Cardiovascular Nurses Association, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol 2012;60:e44-164.
2. Gibbons RJ, Abrams J, Chatterjee K, Daley J, Deedwania PC, Douglas JS, Ferguson TB Jr., Fihn SD, Fraker TD Jr., Gardin JM, O'Rourke RA, Pasternak RC, Williams SV. ACC/AHA 2002 guideline update for the management of patients with chronic stable angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for the Management of Patients with Chronic Stable Angina). 2002. Available at: www.acc.org/clinical/guidelines/stable/stable.pdf

S.4. Numerator Statement: Patients who were prescribed beta-blocker therapy

S.6. Denominator Statement: All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12-month period who also have a prior (within the past 3 years) MI or a current or prior LVEF <40%

S.8. Denominator Exclusions: Denominator Exceptions:

Documentation of medical reason(s) for not prescribing beta-blocker therapy (e.g., allergy, intolerance, other medical reasons).

Documentation of patient reason(s) for not prescribing beta-blocker therapy (e.g., patient declined, other patient reasons).

Documentation of system reason(s) for not prescribing beta-blocker therapy (e.g., other reasons attributable to the health care system).

De.1. Measure Type: Process

S.17. Data Source: [Electronic Health Records](#)

S.20. Level of Analysis: [Clinician : Group/Practice, Clinician : Individual](#)

IF Endorsement Maintenance – Original Endorsement Date: [Dec 09, 2016](#) **Most Recent Endorsement Date:** [Dec 09, 2016](#)

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 sub criteria to pass this criterion and be evaluated against the remaining criteria.***

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

[nqf_evidence_attachment_0070e_FINAL_08APR19.docx](#)

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

No

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., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

For patients with coronary artery disease (CAD), beta-blockers are recommended for 3 years after myocardial infarction or acute coronary syndrome. Beta-blockers, particularly carvedilol, metoprolol succinate, or bisoprolol which have been shown to reduce risk of death, are recommended indefinitely for patients with CAD and LV systolic dysfunction. These agents have proven efficacy in reducing angina onset and improving the ischemic threshold during exercise. In patients who have suffered an MI, beta-blockers significantly reduce deaths and recurrent MIs. (1) Nonadherence to cardioprotective medications is prevalent among outpatients with CAD and can be associated with a broad range of adverse outcomes, including all-cause and cardiovascular mortality, cardiovascular hospitalizations, and the need for revascularization procedures.(2) This measure is intended to promote beta-blocker usage in select patients with CAD.

References:

1. Fihn SD, Gardin JM, Abrams J, Berra K, Blankenship JC, Dallas AP, Douglas PS, Foody JM, Gerber TC, Hinderliter AL, King SB III, Kligfield PD, Krumholz HM, Kwong RYK, Lim MJ, Linderbaum JA, Mack MJ, Munger MA, Prager RL, Sabik JF, Shaw LJ, Sikkema JD, Smith CR Jr, Smith SC Jr, Spertus JA, Williams SV. 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and management of patients with stable ischemic heart disease: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, American Association for Thoracic Surgery, Preventive Cardiovascular Nurses Association, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol 2012;60:e44-164.
2. Gibbons RJ, Abrams J, Chatterjee K, Daley J, Deedwania PC, Douglas JS, Ferguson TB Jr., Fihn SD, Fraker TD Jr., Gardin JM, O'Rourke RA, Pasternak RC, Williams SV. ACC/AHA 2002 guideline update for the management of patients with chronic stable angina: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to

Update the 1999 Guidelines for the Management of Patients with Chronic Stable Angina). 2002. Available at: www.acc.org/clinical/guidelines/stable/stable.pdf

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. 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 include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

2016 EHR data from the PQRS program was provided to the PCPI by CMS for the purposes of testing the measure. The data are analyzed for the time period January 2016 through December 2016. There were 57,338 quality events included in this analysis. These were the quality events that were associated with providers who had 1 or more quality events eligible for this measure. Based on the sample of 2,178 included providers, the mean performance rate is 0.89, the median performance rate is 1.00 and the mode is 1.00. The standard deviation is 0.19. The range of the performance rate is 1.00, with a minimum rate of 0.003 and a maximum rate of 1.00. The interquartile range is 0.15 (1.00–0.00). Decile, Performance (1st,0.67; 2nd,0.80; 3rd,0.90; 4th,1.0; 5th,1.0; 6th,1.0; 7th,1.0; 8th,1.0; 9th,1.0; 10th,1.0)

Historical PQRS data from the PQRS experience report does not differentiate between EHR and Registry average performance rates. Performance scores over time are for: 2013: 74.2%, 2014: 79.3%, 2015: 85.1%

It should be noted that PQRS was a voluntary reporting program. Overall participation in the program was suboptimal with 72% of eligible professionals using any method to participate in PQRS, in 2016. The performance scores listed above are not consistently derived from a nationally representative sample.

Quality benchmarks for MIPS 2018 were made publicly available in January 2019. As MIPS is a new program, historical PQRS data was used with MIPS eligibility criteria applied in order to create the benchmark. Providers earn points depending what decile of the benchmark they fall into. The EHR average performance rate reported in the benchmark report is 74.8% and standard deviation of 23.1. Deciles 3 through 10 are also reported and are as follows: Decile, Performance (3rd, 51.35%-68.22%, 4th, 68.23%-78.77%, 5th, 78.78%-82.64%, 6th, 82.65%-86.32%, 7th, 86.33%-90.79%, 8th, 90.80%-94.25%, 9th, 94.26%-97.60%, 10th, =97.61%. While not made explicit in the publicly available documentation, it is thought that deciles 1 and 2 are not included in the file since providers earn the same amount of points for results in those deciles regardless of performance. No additional data is available at this time.

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.

While rates have improved over time, suboptimal rates of beta-blocker prescriptions among patients with CAD indicated by PQRS data are further evidenced by several recent studies.

A recent observational study using data from the NCDR® PINNACLE registry found that patients with a diagnosis of CAD from January 1, 2013 through May 1, 2014 enrolled in Medicare Advantage (MA) were more likely to be prescribed beta-blockers (80.6% to 78.8%, P<.001) than Medicare FFS patients. MA patients were found to be younger, but also had more co-morbidities than the FFS patients, as well as more likely to receive other guideline recommended therapy such as ACE/ARB and statin therapy. (1)

Maddox and colleagues analyzed data from 2008 through 2010 from the NCDR® PINNACLE Registry®, a national outpatient cardiology practice registry, to assess practice variation of secondary prevention medication prescription among CAD patients. Among eligible patients, beta-blockers were prescribed in 73.3% (63,800/86,999) at their index clinic visit. After inclusion of all visits among eligible patients occurring within the year following the index visit, the rates increased to 77.3%. Among practices, the median prescription rate of beta-blockers for eligible patients at their index clinic visit was 78.4% (range 35.2-100%) and 79.4% (range 46.2-100%) after inclusion of all visits among eligible patients occurring within the year following the index visit.(2)

An earlier study by Chan and colleagues analyzed 2008-9 data from the Pinnacle registry and found slightly higher rates (86.4%) of beta-blocker prescription among CAD patients following an MI. It's important to note that the Chan et al. study examined compliance rates with performance measures among the first 14,000 outpatients enrolled in the PINNACLE program as compared to the Maddox et al study which included a larger and more heterogeneous patient and practice population.(3)

References:

1. Figuereroa JF, Blumenthal DM, Feyman Y, Frakt AB, Turchin A, Doros G, et al. Differences in management of coronary artery disease in patients with Medicare Advantage vs traditional Fee-for-Service Medicare among cardiology practices. *JAMA Cardiology*. 2019;4(265-271).
2. Maddox TM, Chan PS, Spertus JA, Tang F, Jones P, Ho PM, Bradley SM, Tsai TT, Bhatt DL, Peterson PN. Variations in coronary artery disease secondary prevention prescriptions among outpatient cardiology practices: insights from the NCDR (National Cardiovascular Data Registry). *J Am Coll Cardiol*. 2014 Feb 18;63(6):539-46. doi: 10.1016/j.jacc.2013.09.053. Epub 2013 Oct 30.
3. Chan PS, Oetgen WJ, Buchanan D, et al. Cardiac performance measure compliance in outpatients: the American College of Cardiology and National Cardiovascular Data Registry's PINNACLE (Practice Innovation And Clinical Excellence) program. *J. Am. Coll. Cardiol*. 2010; 56(1):8–14.

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 maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

While this measure is included in a federal reporting program(s), the program does not provide disparities data to analyze and report. In Section 1b.5 below, we provide disparities data reported in the literature.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

The Chan et al. article cited above conducted a secondary analysis of PINNACLE data for select performance measures to examine whether compliance rates differed by race or sex. The authors found that compliance rates were similar between black and white patients and men and women for all 4 CAD performance measures (including beta-blocker therapy after MI). (1)

A separate analysis was completed using PINNACLE data from 2009 to compare treatment rates by insurance status for 5 quality-of-care indicators for CAD care related to medication treatment. Uninsured patients were less likely to receive β -blocker therapy after MI as compared with those who had private health insurance (73.3% vs. 80.5%; unadjusted RR=0.91; 95% CI, 0.87-0.95; P<0.001). There were no meaningful differences in treatment rates between patients with public and private insurance. (2)

1. Chan PS, Oetgen WJ, Buchanan D, et al. Cardiac performance measure compliance in outpatients: the American College of Cardiology and National Cardiovascular Data Registry's PINNACLE (Practice Innovation And Clinical Excellence) program. *J. Am. Coll. Cardiol*. 2010; 56(1):8–14.
2. Smolderen KG, Spertus JA, Tang F, et al. Treatment Differences by Health Insurance Among Outpatients with Coronary Artery Disease: Insights from the NCDR®. *J Am Coll Cardiol*. 2013 Mar 12; 61(10): 1069–1075.

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 sub criteria 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 : Coronary Artery Disease

De.6. Non-Condition Specific(check all the areas that apply):

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Elderly

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.)

The measure specifications are attached to this submission. Additional measure details may be found at: eCQI Resource Center <https://ecqi.healthit.gov/eligible-professional-eligible-clinician-ecqms>. Value set details at VSAC: <https://vsac.nlm.nih.gov/>.

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 an eMeasure Attachment: CMS145_v5_6_Artifacts_2019Apr09.zip

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)

Attachment Attachment: 0070e_CAD_BetaBlocker_ValueSets_20190409.xlsx

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

No, this is not an instrument-based measure Attachment:

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Not an instrument-based measure

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

Yes

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

Supporting guidelines and coding value sets included in the measure are reviewed on an annual basis. This annual review has resulted in minor changes to the value sets, to account for updates to the coding terminologies for existing data elements. Measure specifications are annually updated to align with any changes to the standards or tools used to support electronic measurement.

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) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Patients who were prescribed beta-blocker therapy

S.5. 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, time period for data collection, 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 (S.14).

Time Period for Data Collection: At least once during the measurement period

Definition:

Prescribed may include prescription given to the patient for beta-blocker therapy at one or more visits in the measurement period OR patient already taking beta-blocker therapy as documented in current medication list.

Guidance:

Beta-blocker therapy:

- For patients with prior MI, beta-blocker therapy includes any agent within the beta-blocker drug class. As of 2015, no recommendations or evidence are cited in current stable ischemic heart disease guidelines for preferential use of specific agents
- For patients with prior LVEF <40%, beta-blocker therapy includes the following: bisoprolol, carvedilol, or sustained release metoprolol succinate

HQMF eCQM developed and is attached to this submission in fields S.2a and S.2b.

S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*

All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12-month period who also have a prior (within the past 3 years) MI or a current or prior LVEF <40%

S.7. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, 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 target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Time Period for Data Collection: 12 consecutive months

Definition:

Prior Myocardial Infarction (MI) for denominator 2 is limited to those occurring within the past 3 years.

Guidance:

The requirement of two or more visits is to establish that the eligible professional or eligible clinician has an existing relationship with the patient.

A range value should satisfy the logic requirement for 'Ejection Fraction' as long as the ranged observation value clearly meets the less than 40% threshold noted in the denominator logic. A range that is inclusive of or greater than 40% would not meet the measure requirement.

HQMF eCQM developed and is attached to this submission in fields S.2a and S.2b.

S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

Denominator Exceptions:

Documentation of medical reason(s) for not prescribing beta-blocker therapy (e.g., allergy, intolerance, other medical reasons).

Documentation of patient reason(s) for not prescribing beta-blocker therapy (e.g., patient declined, other patient reasons).

Documentation of system reason(s) for not prescribing beta-blocker therapy (e.g., other reasons attributable to the health care system).

S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, 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.)*

Time Period for Data Collection: During the encounter within the 12-month period

Exceptions are used to remove a patient from the denominator of a performance measure when the patient does not receive a therapy or service AND that therapy or service would not be appropriate due to patient-specific reasons. The patient would

otherwise meet the denominator criteria. Exceptions are not absolute, and are based on clinical judgment, individual patient characteristics, or patient preferences. The PCPI exception methodology uses three categories of reasons for which a patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. Examples are provided in the measure exception language of instances that may constitute an exception and are intended to serve as a guide to clinicians. For measure Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%), exceptions may include medical reason(s) (eg, allergy, intolerance, other medical reasons), patient reason(s) (eg, patient declined, other patient reasons), or system reason(s) (eg, other reasons attributable to the health care system) for not prescribing beta-blocker therapy. Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eCQM. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement.

HQMF eCQM developed and is attached to this submission in fields S.2a and S.2b.

S.10. Stratification Information (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – 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.)

Consistent with CMS' Measures Management System Blueprint and national recommendations put forth by the IOM (now NASEM) and NQF to standardize the collection of race and ethnicity data, we encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and payer.

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

No risk adjustment or risk stratification

If other:

S.12. Type of score:

Rate/proportion

If other:

S.13. 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.14. Calculation Algorithm/Measure Logic (Diagram or 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; time period for data, aggregating data; risk adjustment; etc.)

S.12. Type of score:

Rate/proportion

If other:

S.13. 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.14. Calculation Algorithm/Measure Logic (Diagram or 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; time period for data, aggregating data; risk adjustment; etc.)

This measure is comprised of two populations but is intended to result in one reporting rate. The reporting rate is the aggregate of Population 1 and Population 2, resulting in a single performance rate. For the purposes of this measure, the single performance rate can be calculated as follows:

Performance Rate = (Numerator 1 + Numerator 2)/ [(Denominator 1 - Denominator Exceptions 1) + (Denominator 2 - Denominator Exceptions 2)]

Calculation algorithm for Population 1: Patients with left ventricular systolic dysfunction (LVEF <40%)

1. Find the patients who meet the initial population (i.e., the general group of patients that a set of performance measures is designed to address).
2. From the patients within the initial population criteria, find the patients who qualify for the denominator (i.e., the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial population and denominator are identical.
3. From the patients within the denominator, find the patients who meet the numerator criteria (i.e., the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator
4. From the patients who did not meet the numerator criteria, determine if the provider has documented that the patient meets any criteria for exception when denominator exceptions have been specified [for this measure: medical reason(s) (e.g., allergy, intolerance, other medical reasons), patient reason(s) (e.g., patient declined, other patient reasons), or system reason(s) (e.g., other reasons attributable to the health care system) for not prescribing beta-blocker therapy]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. --Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (i.e., percentage with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI.

If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.

Calculation algorithm for Population 2: Patients with a prior (within the past 3 years) myocardial infarction

1. Find the patients who meet the initial population (i.e., the general group of patients that a set of performance measures is designed to address).
2. From the patients within the initial population criteria, find the patients who qualify for the denominator (i.e., the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial population and denominator are identical.
3. From the patients within the denominator, find the patients who meet the numerator criteria (i.e., the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator
4. From the patients who did not meet the numerator criteria, determine if the provider has documented that the patient meets any criteria for exception when denominator exceptions have been specified [for this measure: medical reason(s) (e.g., allergy, intolerance, other medical reasons), patient reason(s) (e.g., patient declined, other patient reasons), or system reason(s) (eg, other reasons attributable to the health care system) for not prescribing beta-blocker therapy]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. --Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (i.e., percentage with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI.

If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.

S.15. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

If an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.
Not applicable. The measure is not based on a sample.

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.
Not applicable. The measure is not based on a survey.

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Electronic Health Records

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

If instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

Not applicable.

S.19. 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.20. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Clinician : Group/Practice, Clinician : Individual

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Home Care, Other, Outpatient Services, Post-Acute Care

If other: Nursing Facility Visit, Care Services in Long-Term Residential Facility

S.22. 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.)

Not applicable. The measure is not a composite.

2. Validity – See attached Measure Testing Submission Form

0070e_nqf_testing-attachment_7.1-636851367130166668.docx

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

No - This measure is not risk-adjusted

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)

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*) Update this field for **maintenance of endorsement**.

ALL data elements are in defined fields in electronic health records (EHRs)

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. For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

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. Please also complete and attach the NQF Feasibility Score Card.

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. Required for maintenance of endorsement. Describe difficulties (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 instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

We have not identified any areas of concern or made any modifications as a result of testing and operational use of the measure in relation to data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, and other feasibility issues unless otherwise noted.

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*).

The Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial uses of the Measures require a license agreement between the user and the AMA, (on behalf of the PCPI), ACC or AHA.

Limited proprietary coding is contained in the Measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets.

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.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	<p>Payment Program</p> <p>Medicare Quality Payment Program Merit-based Incentive Payment Program (MIPS) https://qpp.cms.gov/</p> <p>Medicare Quality Payment Program Merit-based Incentive Payment Program (MIPS) https://qpp.cms.gov/</p>

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

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

1. Merit-based Incentive Payment System (MIPS)-Sponsored by the Centers for Medicare and Medicaid Services (CMS)

Prior to 2016, this measure was used for Eligible Providers (EPs) in the Physician Quality Reporting System (PQRS). As of 2017, PQRS has been replaced by the Merit-based Incentive Payment System (MIPS). MIPS is a national performance-based payment program that uses performance scores across several categories to determine payment rates for EPs. MIPS takes a comprehensive approach to payment by basing consideration of quality on a set of evidence-based measures that were primarily developed by clinicians, thus encouraging improvement in clinical practice and supporting advances in technology that allow for easy exchange of information.

According to the CY 2018 Quality Payment Program final rule, CMS intends to “make all measures under MIPS quality performance category available for public reporting on Physician Compare in the transition year of the Quality Payment Program, as technically feasible.” These measures include those reported via all available submission methods for MIPS-eligible clinicians and groups. Because this measure has been in use for at least one year and meets the minimum sample size requirement for reliability, this measure meets criteria for public reporting. 2018 data will be available for public reporting on Physician Compare in late 2019. The Registry version of this measure is currently included in the downloadable database on the Physician Compare website and is not yet available on individual or group profiles.

4a1.2. 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?)

We support the expanded use of this measure in government or other programs, including those intended for accountability or public reporting. The AMA and PCPI do not have any policies that would restrict access to the performance measure specifications or results or that would impede implementation of the measure for any application. We would welcome its implementation in emerging applications such as accountable care organizations (ACO), Medicare Advantage insurance plans or health plans selling on the insurance marketplace.

4a1.3. 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.)

As described above, it is our understanding that CMS is also planning to move towards publicly reporting physician data via Physician Compare. The Registry version of this measure is currently included in the downloadable database on the Physician Compare website and is not yet available on individual or group profiles. Also, although the measure is currently in use, we support expanded use of this measure in government or other programs, including those intended for accountability or public reporting.

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

The PCPI measure development and maintenance process is a rigorous, evidence-based process that has been refined and

standardized since the PCPI's inception in 2000. Throughout its tenure, the PCPI has conducted its measure development and maintenance process with strict adherence to several key principles, including the following which underscore the role those being measured have played in the development and maintenance process and in providing feedback based on measure implementation:

Collaborative Approach to Measure Development

PCPI measures are developed and maintained through cross-specialty, multi-disciplinary technical expert panels. Representatives of relevant clinical specialties are invited to participate in our expert panels to advise us throughout the measure development process and as questions arise during measure implementation. Additionally, other health care providers and stakeholders participate in our panels as equal contributors to the measure development process. The PCPI also strives to include on its panels individuals representing the perspectives of patients, consumers, private health plans, and employers. Liaisons from key measure development organizations, including The Joint Commission and NCQA, at times participate in the PCPI's measure development process to ensure measure harmonization. Measure methodologists and coding and informatics experts are also considered important members of the expert panel. This broad-based approach to measure development maximizes the input from those being measured and other stakeholders to develop evidence-based, feasible and clinically meaningful measures.

Public Comment Period

Input from a wide range of stakeholders is integral to the measure development process. To invite other perspectives and expertise beyond the expert panels and particularly from those providers and facilities that will implement these measures, the PCPI submits the measures for public comment. All measures are released for a 30-day public and PCPI member comment period. All comments are reviewed by the technical expert panel to determine whether measure modifications are needed based on comments received.

Feedback Mechanisms

The PCPI has a dedicated mechanism set up to receive measure-related comments and questions from implementers. As comments and questions are received, they are shared with appropriate staff for follow up. If comments or questions require expert input, these are shared with the PCPI's technical expert panels to determine if measure modifications may be warranted. Additionally, for PCPI measures included in federal reporting programs, there is a system that has been set up to elicit timely feedback and responses from PCPI staff in consultation with technical expert panel members, as appropriate.

Feasibility Assessments

The PCPI solicits feedback on measure feasibility in the following domains: data availability, data accuracy, data standards, and workflow to guide future modifications to the measure. During this process, we may receive recommendations to improve the experience of those implementing and reporting on this measure and we follow up on any questions or concerns received by those completing the feasibility assessment. Doing so addresses any issues with interpretation and serves as an important step in the measure development process.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

See description in Section 4a2.1.1 above.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

As described in Section 4a2.1.1, the PCPI invites feedback through various mechanisms. We obtain input from our topic-specific technical expert panels during the measure development and during the annual maintenance process. Additionally, the PCPI obtains feedback via an online public comment and an email-based process set up to receive measure inquiries from implementers.

4a2.2.2. Summarize the feedback obtained from those being measured.

We have received no feedback from those being measured that resulted in any changes to this measure.

4a2.2.3. Summarize the feedback obtained from other users

We have received no feedback from other users that have resulted in changes to this measure.

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

Not applicable based on answers provider in 4a2.2.2 and 4a2.2.3.

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.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (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.)

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.

The intent of this measure is to improve care of patients diagnosed with coronary artery disease. CMS data report an improvement or in reporting rates in the last 6 years. However, reporting rates represent but one facet of the quality improvement process.

While the PCPI creates measures with an ultimate goal of improving the quality of care, measurement is a mechanism to drive improvement but does not equate with improvement. Measurement can help identify opportunities for improvement with actual improvement requiring making changes to health care processes and/or structure. In order to promote improvement, quality measurement systems need to provide feedback to front-line clinical staff in as close to real time as possible and at the point of care whenever possible. (1)

1. Conway PH, Mostashari F, Clancy C. The future of quality measurement for improvement and accountability. JAMA. 2013 Jun 5;309(21):2215-6.

4b2. 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).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

We have not received reports of unexpected findings resulting from the implementation of this measure. The PCPI has various mechanisms in place for measure users to provide feedback and to identify issues related to the maintenance and implementation of this measure. We convene several topic-specific technical expert panels comprised of various stakeholders including those being measured to advise us regarding any unexpected findings and actions that can be taken to mitigate them.

4b2.2. Please explain any unexpected benefits from implementation of this measure.

As the prescription of beta-blockers for patients with CAD who have had a prior myocardial infarction or who have LVEF <40% is part of the pharmacotherapy piece of guideline directed medical therapy (along with prescription of antiplatelet therapy, prescription of ACE inhibitor or ARB or ARNI therapy for those for whom it is recommended, and prescription of statin therapy for those for whom it is recommended), it could be anticipated that rates of prescribing these therapies would show improvement as well.

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)

0070 : Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)
 0071 : Persistence of Beta-Blocker Treatment After a Heart Attack
 0083 : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)
 0083e : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)
 0117 : Beta Blockade at Discharge
 0127 : Preoperative Beta Blockade

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

5a. Harmonization of Related Measures

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 harmonized to the extent possible?

Yes

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

Measure 0070e addresses a patient population of patients with CAD and either a recent prior MI or LVSD. This patient population is also covered in part by the following NQF-endorsed measures: NQF 0071: Persistence of Beta-Blocker Treatment After a Heart Attack and NQF 0083 and 0083e: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD). The specifications are harmonized to the extent possible. As a result, the denominator specifications for the measures differ where needed based on the differing patient populations. Additionally, NQF 0071 is intended for use at the health plan level. NQF 0117 is an inpatient/hospital level measure and includes only patients who have undergone isolated CABG surgery. NQF 0127 is also an inpatient/hospital level measure that focuses on administration of beta-blockers prior to isolated CABG surgery. Measure 0070 is the registry version of this measure and is completely harmonized.

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.)

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:

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): PCPI Foundation

Co.2 Point of Contact: [Samantha, Tierney, Samantha.Tierney@ama-assn.org, 312-224-6071-](#)
Co.3 Measure Developer if different from Measure Steward: [PCPI Foundation](#)
Co.4 Point of Contact: [Kerri, Fei, kerri.fei@thepcpi.org, 312-224-6070-](#)

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.

PCPI measures are developed and maintained under the aegis of topic-specific technical expert panels (TEPs). The PCPI TEPs are comprised of clinicians and other healthcare professionals representing medical specialty societies and other stakeholders. The TEPs provide clinical expertise as well as advise on methodologic questions and review the measures annually to ensure accuracy and adherence to the most current evidence.

Cardiovascular Technical Expert Panel

[Sarah J. Goodlin MD, FACC, FAAHPM \(Co-Chair\)](#)

[Ileana L. Piña MD, MPH \(Co-Chair\)](#)

[Donald E. Casey MD, MPH, MBA](#)

[Ted Ganiats MD](#)

[Kathleen L. Grady PhD, RN, FAAN](#)

[Richard Hellman MD, FACP, FACE](#)

[Tony Hermann](#)

[Denise M. Kolanczyk PharmD, BCPS-AQ Cardiology](#)

[Frederick A. Masoudi MD, MSPH](#)

[Joseph V. Messer MD, MACC](#)

[David S. Nilasena MD, MSPH, MS](#)

[Stephen D. Persell MD, MPH](#)

[Paul D. Rockswold MD, MPH, FAAFP](#)

[Nancy K. Sweitzer MD, PhD](#)

[Carmen M. Terzic MD, PhD](#)

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: [2003](#)

Ad.3 Month and Year of most recent revision: [2019](#)

Ad.4 What is your frequency for review/update of this measure? [Supporting guidelines and specifications for this measure are reviewed on an annual basis.](#)

Ad.5 When is the next scheduled review/update for this measure? [2020](#)

Ad.6 Copyright statement: [Copyright 2019 American College of Cardiology, American Heart Association and American Medical Association. All Rights Reserved.](#)

Ad.7 Disclaimers: [The Measure is not a clinical guideline, does not establish a standard of medical care, and has not been tested for all potential applications.](#)

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[AMA and PCPI encourage use of the Measure by other health care professionals, where appropriate.](#)

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Ad.8 Additional Information/Comments: Zip file containing feasibility results for 3b.3 will be sent via email as it cannot be uploaded.